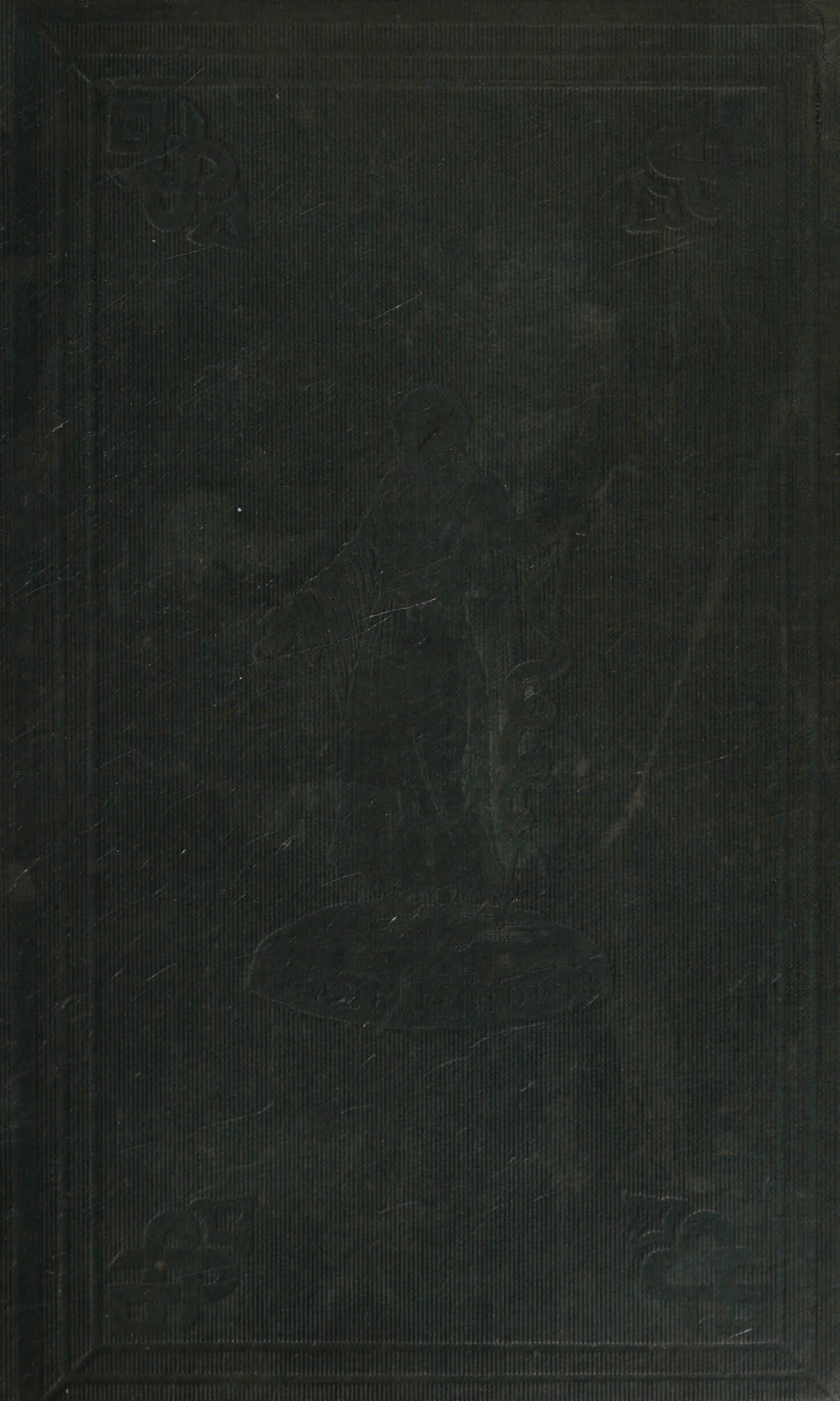

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HALF-YEARLY ABSTRACT

OF THE

MEDICAL SCIENCES.

JANUARY—JUNE.

1852.

PRINTED BY C. AND J. ADLARD, BARTHOLOMEW CLOSE.

43134

THE

HALF-YEARLY ABSTRACT

OF THE

MEDICAL SCIENCES:

BEING

A PRACTICAL AND ANALYTICAL DIGEST OF THE CONTENTS OF THE PRINCIPAL BRITISH AND CONTINENTAL MEDICAL WORKS PUBLISHED IN THE PRECEDING SIX MONTHS.

TOGETHER WITH

A SERIES OF CRITICAL REPORTS ON THE PROGRESS OF MEDICINE AND THE COLLATERAL SCIENCES DURING THE SAME PERIOD.

EDITED BY

W. H. RANKING, M.D. CANTAB.

PHYSICIAN TO THE NORFOLK AND NORWICH HOSPITAL.

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CICERO.

VOL. XV.

JANUARY—JUNE 1852.

LONDON:

JOHN CHURCHILL, PRINCES STREET, SOHO.

EDINBURGH: MACLACHLAN & CO.

DUBLIN: FANNIN & CO.

MDCCCLII.

Vol. XVI will appear on the 1st of January, 1853.

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M. D.—*Space will not allow of the reprint of Mr. Paget's Lectures on Tumours, at present.*

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HALF-YEARLY ABSTRACT

OF

THE MEDICAL SCIENCES,

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PART I.

PRACTICAL MEDICINE, PATHOLOGY, & THERAPEUTICS.

SECT. I.—DISEASES OF THE NERVOUS SYSTEM.

ART. 1.—*Treatment of Delirium Tremens by the Internal Exhibition of Chloroform.* By STEPHEN PRATT, M.D., Baltimore, U. S.

(*American Journal of the Medical Sciences*, Jan. 1852.)

[THE inhalation of chloroform, as may be seen by reference to our former volumes, has been frequently resorted to with advantage in delirium tremens; in the following cases its internal use appears to have been attended with still more marked benefit, and as these cases appear trustworthy, we transfer them to our pages.]

Case I.—A man had been under judicious treatment for seven days, during which he had not slept, and his case was considered hopeless. When seen at 1 p. m., May 7, he was feeble and exhausted, with subsultus, muttering delirium, and clammy sweats. As he had been on a mixed opiate and stimulant plan without avail, one drachm of chloroform diluted with water was given. At 5 p. m., another drachm was administered, and at 9 a third diluted as before. At 10 o'clock he slept soundly, waking at 8 in the morning, when, after taking some gruel, he slept again. On waking a second time he took some strong soup, and slept well during the next night. From this time his recovery was rapid.

Case II.—J. H—, June 4th, 1851, labouring under delirium tremens. He was at first put upon a mixed opiate and stimulant treatment through the day, and took opium in full doses through the night.

This plan was continued two days and nights, without benefit; indeed the patient grew worse. The third morning he took—

℞ Spts. Sulph. Ætheris Comp., Tinct. Valerianæ, ana ʒjss;
To take ʒij every two or three hours, intermediately giving Tinct. Opii.

At 8 o'clock p. m., gave a large opiate. At 10 p. m., gave Tinct. Opii, ʒj. At 12 repeated the dose; and at 2 again repeated it. All this time the patient grew worse, and became "furiously delirious," frightening all the household.

Three men were employed to prevent him from jumping out of the windows (several attempts at which he had made), or otherwise injuring himself. At times he was a match for them all. At length he grew weak, becoming more and more prostrated by his great exertions. The family became alarmed and wished further advice. A consulting physician was called in. A hot stimulating pediluvium and an opio-tartar emetic treatment were agreed upon.

The author suggested chloroform internally, which was not wholly objected to, though not preferred by the consulting physician. Accordingly the former was tried, but unfortunately without success, the patient rapidly growing worse.

He was now beyond control, a raving maniac, a terror to all present. His pulse was very feeble and frequent; so frequent it could not be counted with the existing tremor. His tongue was dry; there were also muttering, subsultus, and perfect incoherence, with cold and clammy extremities.

Under these circumstances, the author determined to exhibit chloroform as a dernier ressort.

A teaspoonful nearly, diluted with water, was administered. After one hour the following was given—

℞ Spts. Sulph. Ætheris Comp., Tinct. Valerianæ, āā fʒij;
Chloroform, fʒj, (at a draught.)

(The compound spirit of Sulphuric Ether and Tinct. Valerianæ were added, in order to obviate, if possible, the danger of fatal prostration.) Fifteen minutes after its exhibition the patient fell asleep, and slept soundly three hours and a half. Meantime perspiration ceased; his extremities became *warm;* his pulse grew *calmer*, *fuller*, and *firmer*. He then awoke much refreshed and quite rational, and had a free, natural dejection.

Three teaspoonfuls of the mixture—Hoff.'s Anodyn. and Tinct. Valerianæ, with half a teaspoonful of Chloroform, were then exhibited. After this he washed his hands and face, and bathed himself generally. In one hour the author exhibited fʒiv of the mixture, with fʒj of chloroform, and persuaded him to lie down. In a few minutes he was asleep, and slept comparatively soundly four hours, when he arose, went down stairs, and evacuated his bowels. In fifteen minutes he was again asleep, and slept three hours, when he waked and drank a tumbler of milk, took a dose of Spts. Sulph. Ætheris Comp. and Tinct. Valerianæ; fifteen minutes afterwards he was asleep again, and continued sleeping through the night, rising, meantime, but once.

In the morning he arose, drank some milk and beef tea, and after evacuating his bowels again went to sleep. His pulse was now good; extremities warm, glowing; subsultus greatly diminished; delirium almost entirely absent. He slept till about noon, and then woke still more tranquil. During the afternoon he slept and woke alternately, and rested well the following night. His sleep was not comatose. When awake, he was wide awake, cheerful, and lively. A day or two passed thus as he rapidly convalesced. On the 9th, he was walking about the city a comparatively well man. He has continued well since.

Such are the facts. From a furious delirium, with subsultus, perfect incoherence, cold clammy sweats, fluttering pulse, and he was, under the action of chloroform, placed in a favorable state. No sickness occurred.

ART. 2.—*On Syphilitic Meningitis.* By THOMAS READ, M.B., Belfast.

(*Dublin Quarterly Journal of Medical Science*, Feb. 1852.)

Among the most remote and latent signs of constitutional syphilis are those of cerebral origin, and to these the author desires to give consideration commensurate with their importance. Ricord, alluding to the subject of osseous growths, says, "Another consequence of this compression is epilepsy, but this otherwise formidable disease is, in such cases, easily got rid of. I must not omit to mention paraplegia as a casual effect of tertiary syphilis in the bones; the nervous disturbance is then the result of an osseous lesion, which latter begins by circumscribed nocturnal pains, and is developed slowly." The author also quotes Dr. Todd, in a clinical lecture on the difficulties of diagnosis in tertiary syphilis. He observes, in reference to a case—"The patient had contracted syphilis about fourteen years ago, for which he took mercury to salivation. From many consequent evils attendant on this disease he seems to have escaped pretty well, and no unfavorable symptoms occurred till five years since, when he applied to one of the hospitals for contraction and rigidity of the flexor muscles of the right fore-arm, with numbness. The case was mistaken, and he went from hospital to hospital uncured. A friend gave him hydriodate of potash and he got well."

The author narrates several instructive cases of syphilitic disease of the cranial membranes. In the first, the patient had paraplegia, hemiplegia, and amaurosis, with increasing hebitude of the mental faculties. Under the full action of mercury he recovered from an apparently hopeless state. In the second case, there was mental incompetence, paralysis, and suicidal propensity. In the third, together with these, there were epileptic seizures and intense neuralgic headaches. Both recovered under mercurial action. Upon these cases the author comments as follows:

"The practical conclusions I would deduce from the foregoing cases are very obvious. First, that a single symptom of cerebral disturbance, such as some form of mental disorder, may alone indicate the organic mischief in progress; a cachectic countenance may excite

suspicion of its nature, but a close investigation of the previous history of the patient is required to affix its true character. Secondly, that the employment of mercury, in this stage of syphilis, is unattended with those formidable consequences of which we are so strongly forewarned. No measure of bodily exhaustion has deterred me from its employment, once I had discriminated the disease."

The author concludes with a contrast of the effect of mercury on the constitution in primary and tertiary syphilis.

"When mercury has been administered for a primary sore, in a good constitution, its action is marked by physical reduction and depression. There will be loss of flesh and weight; muscular power will diminish; the countenance becomes pale; the intellect unfitted for sustained effort; in fact, mercury visibly acts as a poison in a higher or lower degree. . . . But all these phenomena are directly reversed where the body has long sustained the inroads of the syphilitic poison. The more advanced the stage, the wider the range of involvement, the more signally does mercury, judiciously employed, exhibit its strange conversion into a tonic, and its prompt action as a restorative. All the functions are roused into vigorous effort; refreshing repose visits the patient; the appetite and digestion return; the muscles recover their tone; the eyes lose their dull and desponding cast; flesh and weight are added. These facts I have repeatedly witnessed in several other forms of syphilitic cachexia."

Art. 3.—*On Arthritic Headache.*

By William Hervey, Esq., London.

(*Provincial Medical and Surgical Journal*, Oct. 15, 1851.)

Arthritic headache is a disease that often escapes detection, especially if the patient has not previously had a paroxysm of gout in its regular form, so as to aid the judgment of the practitioner in forming a diagnosis. The symptoms which mark the disease are attributed to an ordinary determination of blood to the head, or rather to the brain, and the treatment is in accordance with such views. A greater mistake could hardly be committed, for all the depletory measures in the treatment of gouty affections of the brain and its membranes are injurious, yet such constitute the principal remedies employed to relieve the consequences of determination of blood to the brain. As it is very generally, although not always, that the head, and subsequently the ear, become affected by the metastatic action of gout, the author thinks he cannot better allude to the subject as a confirmation of his own views, than by quoting the forcible and clear description given of it by Dr. Gairdner. He observes: — "That metastasis to the head appears by far the most usual of misplaced gout. It occurs with every degree of suffering. The headaches from which those persons suffer, in whom the excretions of urates and urea have, from any cause, been suddenly diminished or temporarily arrested, are only a commencement of this affection, which may well be likened to the effect of a poison. I believe that the substance of the brain itself is the part usually affected in these cases, and my

reasons are, that they are never attended with delirium or wandering, but always accompanied by stupor or apoplexy, the ruptured vessel is found in the cerebral substance. It has been said that such cases are to be treated like apoplexy from any other cause. I am quite satisfied that this information is most dangerous. Patients affected with gout in the head do not bear the abstraction of large quantities of blood. Much regard must be had to the heart, which is always more or less diseased, and sometimes in an advanced state of disorganisation. We may easily and quickly relieve the worst head symptoms; but if the relief afforded be meted out with wariness and skill, we shall too surely discover that we have fastened on our patient worse and more hopeless evils. The abstraction of much blood is, however, wholly unnecessary. A relief given to the system by a small bleeding, will enable the kidneys to resume their office, and the worst symptoms will then safely depart.

"In these cases colchicum is a most useful remedy. I have mentioned the discovery of Chelius, Maclagan, and Servius, that it greatly increases the secretion of urea. The application of this fact to the case in hand must be obvious to all, and the effects of the medicine will fully answer their expectation; but here, too, I would insist on the propriety of using minute doses of the remedy, which more safely and not less effectually than larger ones, accomplish the objects in view. Laxatives in head cases are always necessary; and even drastic purgatives may be required. Prudence, however, is indispensable in their use; for while no constipation is permitted which would urge the blood to the head, regard must be had to the patient's shattered condition. Precise rules cannot be laid down; but the experienced physician will hardly err if he do not lose sight of the impaired condition of the circulation, at present labouring under a double disadvantage from the oppressed state of the brain, in addition to disease of the central organ."

Arthritic headache, then, is a disease which demands considerable discrimination and close observation to detect, based on the information obtained by extensive experience, as it is only by distinctive signs, which, by some may be regarded as apparently trivial, that we shall be enabled to determine the true nature of the attack.

It occurs generally among those in whom gout fails to show itself in the ordinary way, but remains lurking in the system ready to pounce upon any organ which, by fortuitous circumstances, may be liable to take on diseased action. The higher classes of the community, among whom gout is frequently an heir-loom, being in many instances transmitted by both parents, are far more liable to this form of metastatic gout than are either the members of the middle or of the lower orders of society. It is, likewise, found more readily to affect the females of a gouty family than the males, and more frequently after certain periods of life have been reached. The younger members, and the male branches, do not meet with absolute immunity from arthritic headaches, but they are much less subject to attacks.

The symptoms which are not pathognomonic of this disease are,—a sense of fulness in the head, generally constant, but liable occasionally, from casual circumstances, to change into severe pain; a

feeling of vertigo or giddiness, and as if a movement were occurring in the head—a feeling to which the attention of the patient is continually drawn, and which, apparently, impairs the power of thought and of memory; all the perceptions are confused, and the patient at the same time experiences a sensation as if he were about to become insensible. If he stoops he is apt to be seized with temporary blindness, the hearing is inordinately acute, the least noise rendering him almost distracted; he is frequently troubled with a buzzing sound, and sometimes with other noises in the ears; flushings and heat pass at times over the head and face; the hair is often tender and painful when touched, and the scalp feels hot, constricted, and uneasy. With respect to the general symptoms which attend upon this state, they are such as indicate a disordered condition of the digestive apparatus, and an ill-regulated and badly-formed secretion.

The function of digestion is, most frequently, very imperfectly performed; flatulence, with acid eructations; a sense of weight and general uneasiness at the pit of the stomach; rumbling in the bowels; an unpleasant acid or bitter taste in the mouth; the tongue furred with a brown fur, with occasional yellow streaks; a disordered state of the bowels, which are sometimes confined and at others much relaxed, the stools being generally clay-coloured, showing a deficiency of bile, or else very high-coloured, dark, and offensive, showing a redundancy of that excretion, but in a very unhealthy state; the urine unusually scanty and high-coloured, and depositing a reddish sediment on standing, with a rough dry skin, are symptoms which indicate a general disarrangement, and an imperfect performance of the ordinary functions of the body, by which the effete matter of the frame is got rid of by means of the secretions and excretions, and fresh pabulum or material furnished to supply the waste of the system. Meanwhile, in the midst of much disorder of the secretive apparatus, the pulse generally remains undisturbed, or, if at all altered, shows a diminished rate of circulation—a lessened degree of tone in the system.

The symptoms are those that are found to be placed almost beyond the possibility of a doubt. It is the result, the author conceives, of a morbid condition in the function of sanguification, or perhaps of the immediate preparatory process, or chylification, by a failure on the part of the kidneys to perform rightly their secerning duties, by which the separation of urea and uric acid upon the blood should be effected. The presence of this acid in the circulating medium, then, may be regarded as characteristic of the gout, and the fact ascertained by Chelius, of Heidelburgh, that in the course of twelve days, under the administration of colchicum, the kidneys are excited to abstract from the blood nearly double the quantity of uric acid they had previously separated, will amply serve to explain the remedial influence of colchicum in the relief of the disease, and the manner in which the influence is excited.

ART. 4. — *Choreic Movements — Death—Disease of the Corpora Striata, Crus Cerebri, and Cerebral Arteries.* By E. A. PARKES, M.D.

(*Medical Times*, and *Gazette*, Jan. 17, 1852.)

The following case is related as one of great rarity. The patient, an old soldier, æt. 67, was suddenly seized, without premonitory symptoms, with involuntary movements of the right foot, which gradually extended to the whole limb. He had been the subject of an apoplectic seizure two years previously. When admitted into University College Hospital, he was seen to be tossing violently about in bed, like a person in furious mania, but his consciousness and intellect were perfect. The violent movements referred to, when more closely examined, were found to be:—first, movements of the right arm of a peculiar character—simulating those of chorea. The arm was suddenly and violently thrown about in different directions, when, after a few minutes, temporary cessation would occur, but only for a few seconds. By a strong effort of the will these movements could be momentarily controlled. The right leg was moving, but more feebly than the arm; the movements consisted of rapid extension and flexion, and of occasional rotation. The left arm was perfectly tranquil. The left leg was moving slightly, but this appeared to be no more than was induced by the movements of the body. Then, in addition to these movements of the right arm and leg, there were extreme movements of the trunk generally, so violent that it was impossible to tell whether they were confined to one side or not. So with regard to the neck; it appeared as if all the muscles of the neck were in action. The head was sometimes rotated, sometimes thrown violently backwards against the pillow. The effect of all these movements combined was to cause the man to roll over upon the right side, until sometimes he turned completely over. He then rolled back again, apparently by an effort of the will, but never turned upon the left side.

In addition to these movements, respiration was especially affected. It was much quickened; inspiration was short and difficult; expiration extremely prolonged, and apparently imperfect. The intercostal spaces at each inspiration became deeply concave, and during expiration convex. The delay in the pulmonary circulation was shown by extraordinary distension of the external jugular veins.

The other muscles of the body seemed little affected. The tongue was protruded well, and without deviation. There was no drawing of the face. There was no strabismus, neither were the pupils affected. He could swallow tolerably well, though with a little delay. He passed his urine twice in the hospital, and a third time made an ineffectual attempt. Articulation was distinct. The voice was a little husky, but the muscles of the larynx were perfectly unaffected.

[Upon this assemblage of symptoms, Dr. Parkes observes:]

Now, these choreic movements were the *only* symptoms. Intellect and consciousness were perfect. There was no paralysis, except such as had remained after the old attack. He could grasp firmly with the right hand, and could move the right leg at will during the intervals. He could also grasp (less firmly) with the left hand, and

could move the left leg. There was no contraction of any of the muscles. General sensibility also seemed to be perfect. Then there were no special symptoms, as headache, vertigo, or tinnitus. There was no vomiting, nor had there been any. The pulse was now 120.

The questions that presented themselves here, related, first, to the diagnosis; secondly to the treatment. With regard to the former, in most cases of cerebral or spinal affection, we have a number of symptoms, from the occurrence, absence, or relative position of which we are sometimes enabled to form a tolerably accurate diagnosis. But in this case we have nothing to guide us except these choreic symptoms. Now, the first question was this: Had we here a case of chorea, implicating only one side of the body? Chorea, though it chiefly affects young persons, will occur at any age. Dr. Graves records the case of a man aged 70, who was attacked with this disease; and Romberg, in his admirable work, gives an account of a woman 47 years of age, who was affected with chorea of the right side. This case certainly resembles, to some extent, the present. In opposition, however, to this conclusion, we had, first, the age of the patient, which was unfavorable to the notion of chorea, though it did not exclude it; next, the fact that he had had previous disease of the brain, as evidenced by the hemiplegia; then, though we called the movements choreic, they had not precisely the character of choreic movements, and, moreover, such extreme violence is unusual in chorea.

Putting aside, then, simple chorea as improbable, in what other direction were we to look for the cause of these movements? Was there any peripheral cause capable of exciting them? A hasty examination disclosed nothing of this kind. Then, supposing that there was an organic disease of the nervous centres, what was its probable seat? We were justified in excluding the meninges, because, when these are affected, the mind especially suffers in various ways. It was improbable, also, that the lesion was situated in the hemispherical ganglia, in the optic thalami, or in the corpora striata, because the symptoms of disease occurring in these situations are pretty accurately known, and no case is on record to my knowledge, in which either softening or hæmorrhage of these parts gave rise to symptoms of this kind unattended by other signs. The symptoms seemed to point rather to the lower divisions of the nervous centres. From the fact that the muscles of the face seemed quite unaffected, it appeared probable that the disease was seated below the origin of the nerves supplying these parts. Admitting this to be the seat, what was likely to be the nature of the disease? This question was even more difficult to answer than the preceding one. Of the many diseases which may occur in the brain, there were two lesions which were most likely, viz., acute softening and hæmorrhage. Between the two it was not possible to decide, for in either case the same symptoms exactly might have been caused. To decide between them, we should have required the aid of other symptoms, and sometimes even when we have other symptoms, as paralysis, coma, contraction, &c., such decision is impossible. Of the two, the course of the disease seemed perhaps to point rather to hæmorrhage than to softening. The diagnosis, then, appeared at the moment in the highest degree obscure; but

I felt inclined to think that it was hæmorrhage into one side of the medulla.

But a still more important question related to the treatment. In all such cases we have to commence some treatment immediately. The diagnosis may be obscure, but, whether it be or not, something must be done at once for the relief of the patient; and in many cases of head disease, we have simply to treat symptoms. In this case we had no general rule at all to guide us. The case was unusual, and I confess that I knew nothing of it from previous experience. The man himself said, that if the movements continued he could not live; it was indeed evidently necessary to do something to control them; and, as there appeared no argument against its use in such cases, we determined to administer chloroform. The effect was very remarkable. Inhalation had not been continued above two minutes, when he fell asleep, the movements entirely ceased, respiration became easy, and the external jugulars, previously so distended, at once emptied themselves. Inspiration became more perfect, and expiration shorter. All over the front of the chest there were dry rhonchi, chiefly sonorous and droning, the presence of which we could not ascertain before on account of the movements. The pulse fell considerably, being now 108. The heart's impulse was strong; there were no murmurs. He remained asleep for about ten minutes, and then awoke suddenly. The *same moment* the movements recommenced with some violence, speedily increased in severity, and very shortly they were as intense as before. At the same time the difficulty in respiration returned, the obstruction to the pulmonary circulation, as evidenced by the condition of the jugulars, was again manifest, and the pulse increased in frequency. Accordingly the chloroform was repeated, and while he was under its influence, he was bled from the arm to 10 oz. During the bleeding the pulse fell to 92. Shortly afterwards, he awoke, and the movements on the instant recommenced. After waiting for about fifteen minutes, and finding no permanent improvement from these means, we gave him twenty-five minims of tincture of opium in a small quantity of water. He swallowed the draught without much difficulty. Ten minutes afterwards (at 8 p.m.) the respiration appeared extremely difficult, and at each expiration it was noticed that the lips were blown out, more however on the left side than on the right. This blowing out, if it meant anything at all, meant that the lips on the left side were more paralytic than on the other, but at a subsequent period this difference between the two sides had disappeared. The tongue was protruded well, and there was no deviation. The pulse was 120. He now inhaled chloroform for the third time, with the same effects as before, entire cessation of movements, the pulse falling to 88, respiration becoming easy. The pupils, which had previously been moderately expanded and moveable, were now very much contracted, and moved but little. The effects of the chloroform on this occasion lasted a quarter of an hour; he then awoke, the movements immediately recommenced, and the pupils suddenly became larger. At half-past 8, the movements being still extremely violent, chloroform was administered for the fourth time. It was noticed, that while under the influence of chloroform, the blowing out

of the lips was equal on the two sides. The respirations were 20, the pulse 76. Having slept for about 40 minutes, he awoke, and the movements at once recurred with undiminished violence.

At a quarter to 10 p.m. the dose of tinct. opii was repeated, and immediately afterwards chloroform was given for the fifth time. The same effects ensued as on each of the other occasions, the respiration became easy (22 per minute), the pulse sank to 88, and the movements entirely ceased. He now slept quietly for an hour, and on awaking at a quarter to 11, the movements immediately recommenced. Half an hour later, the movements continued violent; he passed some urine. Chloroform was now administered for the sixth time. Its effect, as before, was to induce a quiet sleep, which continued for an hour. At the expiration of that time, however, the movements recurred with their former severity, and continued till half-past 1 a.m., when he fell asleep spontaneously. This spontaneous sleep, *during which the cessation of the movements was as complete as when he was under the influence of chloroform*, lasted about an hour. When he awoke, the movements recommenced with the same characters as before, except that their violence had somewhat diminished. They were still confined apparently to the right side, or rather to the right extremities, the trunk, and neck, and the arm, as at first, was more affected than the leg. The man was still perfectly conscious. There was still no paralysis, no contraction, in fact no symptom except these movements, which, as strength ebbed away, became less violent. He could grasp with both hands. The tongue was protruded without deviation. At a quarter to 8 he again fell asleep spontaneously, and slept quietly for three quarters of an hour. His respirations had now become very slow, numbering only thirteen per minute, and it was observed that expiration was three or four times the length of inspiration. On his awaking, the movements recurred (though now with considerably less violence), and continued till within a few minutes of his death, which took place at 9 a.m., on Monday, November 3d, consciousness having been retained to the last. Cadaveric rigidity came on within half an hour after death, and was extremely well marked in all the limbs. The muscles of the calf were observed to be distinctly harder on the right than on the left side.

At the *post-mortem* examination, the following lesions were discovered:—First, beneath the arachnoid, over the anterior part of the right hemisphere, a small quantity of blood had been effused, and was lying in three or four sulci, having penetrated deeply between the convolutions, but it had not apparently affected the cerebral substance. Secondly, there was softening, apparently old, of the upper and posterior part of the right corpus striatum and adjoining part of the optic thalamus. Before any section was made, the seat of this softening was detected by a depression upon the surface of the corpus striatum and a kind of transparency of the ventricular membrane at that part, with, at one point, a slight thickening of the membrane. The softening appeared to be old; it was of greyish-yellow colour, not red, moderate in degree; not at all like the acute red softening. Then, thirdly, there was a slight amount of similar old softening of the left

corpus striatum. Fourthly, there was hæmorrhage into the left crus cerebri, about half an inch in front of the pons varolii, and nearly in the centre of the crus. The quantity of blood effused was estimated at half a drachm. It was of quite recent effusion, was clotted, and had hollowed out for itself a space in the centre of the crus. The nervous substance around it was torn, but was not obviously softened.

[Dr. Parkes thinks that there can be little doubt but that the disease which caused the movements was the effusion of blood into the left crus cerebri.]

ART. 5.—*Cases of Sciatica and Neuralgia, successfully treated by Acupuncture.* By H. S. BELCOMBE, M.D., Senior Physician to the York County Hospital.

(*Medical Times*, and *Gazette*, Jan. 24, 1852.)

[Upon these cases, Dr. Belcombe makes the following observations:]

As magnetism, galvanism, and the phenomena relating thereto, and its effects upon the human system, seem at present special objects of research, I take the liberty of submitting a few cases of painful disease, where the success of the treatment, to my mind, was principally due to the use of a remedy by no means old in this country, and received with much favour when first introduced by Dr. Elliotson, but which seems now to have fallen into disuse, at least I never hear it proposed in consultation, and the last edition of Dr. Watson's lectures, which I understand is a text-book both in London and Edinburgh, makes no allusion to acupuncture, except for the relief of anasarcous swellings.

I must premise that there has been much rheumatism and neuralgia in this part of the world, but I have reason to believe that I am the only practitioner who has directed the employment of the remedy. Without further preface I proceed to a plain narration.

Case 1.—A lady of fortune, æt. 65, stout, full habit, partial to luxurious living, but a water drinker; indolent as to exercise, except in a carriage, was attacked early in the spring with severe pain across the loins, shooting down the thighs, causing great inconvenience night and day. The bowels were confined; urine moderate in quantity; turbid. The means used gave very partial relief; presently the pain centred just between the tuber ischii and trochanter major, darting down to the knee and ankle; spasmodic action of the calf of the leg, sometimes very great. A needle was inserted just at the seat of pain to some depth, and another two inches lower in the same direction. Both were kept in for two hours and then withdrawn; the pain entirely subsided, and has not hitherto returned.

Case 2.—A retired tradesman, æt. 70; very corpulent; moderately active; fond of the pleasures of the table, but sober. Symptoms much the same, only the pains resembled more the neuralgic tic, and rest was impossible. The needles were introduced three different times before success was obtained; but when obtained it was complete.

Case 3.—A butcher, middle-aged, tall, stout, plethoric; very active in his pursuits, very moderate in his diet. The pains first commenced

in the loins, then the shooting down the thighs, preventing his going to market or attending in his shop; then they concentrated in the sciatic nerve. The needles completely relieved the pain after one insertion.

Case 4.—A married lady, in easy circumstances, æt. 45; no family; very active in her mode of life, very temperate in her living, yet inclined to corpulency; for two years she had been seldom free from this vexatious sciatica, rendering her existence very uncomfortable. Many measures had been tried in vain for relief, and it was only by the effect of persuasion she was induced to consult me. The insertion of the needles was attended with complete success; the pains have not hitherto returned, and her movements are as free and easy as in youth.

I might add three more cases, where the disease was situated in the nerve of the upper extremity, though the effects were most sensibly felt in the wrist, the pain in the shoulder being only casually mentioned or thought of. The insertion of the needles has been always successful. In these, belladonna plasters were also applied to the wrists, though more I think to gratify the patients, who were resolute the seat of disease was there, than from any expectancy I had of relief, though in many cases I have full confidence in the remedy. One case I may mention. A countryman had a paralytic seizure two years back, which deprived him of the power of speech, though the limbs perfectly recovered. I was sent for lately early in the morning. I found him incapable of using his right arm, which seemed to hang motionless, and his friends were persuaded he had had a paralytic attack in the night. From learning somewhat of the history, and examining attentively the limb, observing there was a more clonic spasm than paralytic degeneration, I was certain it was rheumatism, and had a belladonna plaster placed upon the shoulder and muscles of the neck. Other medicines, I think, were calomel and opium. The intelligent countenance, the clear eye, following me attentively as I made my examination, strengthened my judgment as to the nature of the attack. He recovered very shortly.

The medicines I gave in all the cases of sciatic lumbago were acetate of potash in compound infusion of senna, the patients finding much relief from the movement of the lower bowels, and pressure being taken off the kidneys. In the neuralgia of the upper extremity carbonate of iron in full dose was given.

The different medicines were given with a view of testing their peculiar operation. I am of opinion that full purgation is very useful in all cases of rheumatism, especially in the acute; and that it is more useful where the lower extremities are attacked than when the distress falls upon the upper. The carbonate of iron is certainly an excellent remedy where the chronic form prevails. Many years since, I had an epistolary controversy with a Stafford physician on the subject, which appeared in the medical periodicals of those bygone days; but, as he answered not my last letter, I claimed to myself the victory, as remaining on the field; and the practice I have pursued has only corroborated my judgment. The *ratio medendi* I have nothing to do with; I have only to observe, that sound physiology will always lead

to proper modes of practice; whereas theoretical ideas will lead to very unsafe conclusions. My meaning may be thus expressed in other words:—There is often a condition of the system which may appear inflammatory, it is only irritative: apply depletory measures, you increase it; waiting awhile, and observing that inflammation does not increase,—for it is its sure character to proceed,—you may then trust to your more nervine, or, if you please, tonic remedies. Assuredly there are remedies well adapted for the relief of most disorders which affect our system;—how to apply, when to apply, is the wisdom of medicine.

Dr. M'Culloch wrote two large volumes to prove that malaria was the cause of all neuralgic diseases. I have read them attentively,—have observed, I hope, accurately—but I cannot agree with him. I think much of this disease may arise from mode of life, variations of temperature, internally and externally; sudden changes, such as we have experienced lately. At all events, the cases I have narrated were neither in confined situations nor subjected to such localities, and they were all isolated, that is to say, individual—I had not two cases in the same locality, nor were any of them near the Foss, which is a condemned quarter of our city—unjustly, to my mind; for the hospital is near to it, good houses are built and building in its vicinity: nor am I aware of any of the peculiar diseases of malaria particularly noted there.

Art. 6.—*On Spinal Irritation.* By Dr. Heidenmahr.

(*Dublin Quarterly Journal*, Nov. 1851.)

The anatomical and physiological investigations of modern times; the discovery of the isolated course of the primary nervous filaments from the centre to the periphery; the division of the filaments into those of motion, sensation, and special sense; the establishment of the law of eccentric sensation; the doctrine of reflex action; have infinitely advanced our knowledge of the pathology of the nervous system. The ordinary definition of spinal irritation, which may be thus expressed, "An irritation of the spinal marrow, manifesting itself in morbid phenomena in other organs at the periphery," is erroneous, as it is evident that the spinal marrow has no functions which are confined to itself, but that, with all its filaments, it only forms an integral part of the organs at the periphery; this definition is, therefore, unsatisfactory and incomplete. The principle of the theory of spinal irritation is simply this: a variety of forms of disease, which, from their symptoms, appear to have their seat in organs at the periphery, depend, nevertheless, not on any corresponding physical change in these organs, but on an affection of the central terminations of their nerves. From this view it follows that the term, spinal irritation, is by no means adequate, since the central termination of many nervous filaments is in the brain, also the seat of central affections. Moreover, the manner in which the central nervous extremities are affected, does not always correspond to irritation in the ordinary sense, but to something very different. This

being clearly understood, the term, although otherwise objectionable, may be allowed to stand. In irregularities of muscular action, the causal lesion of the nervous centres has long since been recognised; of those of sensation, on the contrary, anæsthesia alone has been referred to such a source; the seat of hyperæsthesia and dysæsthesia is usually incorrectly supposed to lie in the peripheric courses of the nerves in which the symptoms appear. This obtains of neuralgic affections, and still more of lesions of motion and sensibility of the viscera; here the mysterious influence of the sympathetic nerve is to be taken into account. The law of eccentric sensation explains, much more correctly, such symptoms as the vomiting in cerebral affections, the aura epileptica, and other abnormal symptoms.

Pathological anatomy has hitherto paid too little attention to the nervous centres, and too much to the more visible and more tangible pseudo-plastic products in the viscera and tissues; thus giving a partial direction to pathology, and often regarding the consequence as the cause, the product as the total, of the morbid process. It may in general be asserted, that in the neuroses, where the existence of a peripheric irritation is not easily discoverable, (as, for example, carious teeth in many neuralgic affections of the trigeminus,) or where the nervous sheaths are not implicated, the seat of the affection is to be looked for in the central organs. In affections of the motor nerves, we should examine whether an irritation of peripheric nerves does not exist at a distance from the apparent seat of the lesion, causing the anomalous motion by a reflex action, through the intervention of the central organ. The pain in the back, produced by pressure on the spinous processes or at their sides, the author explains by supposing that pressure on the nerves which are distributed on the surface of the vertebral column, can only produce a sensation corresponding to the condition of the central organ; and that if the latter should be, in consequence of any pathological change, abnormal, a corresponding anomalous sensation, such as pain, must be produced. Consequently, pain in the back is a certain sign of an irregular excitement in the spinal marrow, but it does not always indicate what has been denominated spinal irritation. To incorrect views of this relation are partly to be attributed the over-estimation of dorsal pain, as a pathognomonic sign, and the errors which have confused and brought into discredit the theory of spinal irritation. There is scarcely any important morbid process in which the spinal marrow is not affected in one part or other, causing pain on external pressure. Pain in the back, and spinal irritation, are not identical; the former, indeed, corroborates the diagnosis, but may also mislead, especially when the spinal irritation (in the wider sense of the term) is located in the medulla oblongata, or the higher portion of the column. The more exact nature of spinal irritation is not always the same, nor is it defined; the name only signifies, in a general way, a state of suffering. Very different conditions in the central organs are frequently attended with similar combinations of symptoms at the periphery. The most common depend on cases of spinal irritation involving no danger to life, when a purely dynamic alteration is not the cause; on irregular determinations of blood; hyperæmia;

congestions in particular parts of the central organ, which often continue for a long time without passing into effusion; furthermore, on dyscrasia and anæmia. The *treatment* should, in the first instance, be directed to that portion of the centre in which, according to the diagnosis, the affection is located. Without this, success is scarcely to be expected. The local means comprise leeching, cupping, and mercurial inunctions, followed by the use of stimulating liniments, derivatives, cold effusion, and electricity. In conjunction with the local treatment, baths (containing iron, potash, &c.), and cold sea-bathing; or, in their stead, the wet sheet should be employed.

Art. 7.—*Observations on Tinnitus Aurium.*

By W. R. Wilde, Esq., f.r.c.s., &c.

(*Medical Times*, and *Gazette*, March 27, 1852.)

[The author's remarks on this frequent symptom, are to the following effect:]

I know no symptom concerning which a more cautious prognosis should be given; it is one common to almost all, and is peculiar to none of the diseases of the ear. Like muscæ volitantes in the eye, it may exist as an isolated symptom, or it may be an attendant upon several aural diseases. It is often caused by cerebral disease; therefore we should carefully inquire whether it is felt in the head or in one or both ears; it is sometimes an accompaniment of derangement of the circulating, digestive, or uterine organs,—congestion of the brain, hæmorrhage, anæmia, typhus, influenza, or simple catarrh,—closure of the external meatus, obstruction of the Eustachian tube, impaction of the auditory passage with wax, a foreign body, or even a hair resting on the tympanal membrane, as well as engorgement of the lining membrane, or mucous collections in the tympanal cavity, and also nervous deafness, will all produce it. Furthermore, we may remove the original disease, give a healthy action to the affected organ, and restore its function; yet will the noise remain. It is always most felt at night when the patient lies down to rest; it is least experienced in the open air, in a crowd, or when travelling in a carriage. It seldom or never coexists with an open tympanal membrane, and, therefore, perforation of the drum has been restored to with effect to relieve patients of this distressing malady. In cases of complete acquired deaf muteism it is not usually present. So great is the discomfort which it gives, that persons incurably deaf, and who are quite conscious of the impossibility of restoring their hearing, will still apply to be relieved from this haunting and most distressing symptom. And therefore it is that, in the quack advertisements, we always read of the "promise to cure ringing and noises in the ears." As we are all aware, the peculiar characters of the tinnitus, and the noises to which it is likened, are as variable as sound itself. Do these characters of the tinnitus depend upon the cause of the deafness, or the portions of the organs affected? I believe not, and I have taken some pains to investigate the subject. They are no more dependent upon the causes of the disease, nor the structures engaged, than the peculiar

form which ocular spectra and motes floating before the eyes are contingent upon the parts concerned in ophthalmic or cerebral diseases. No one has yet been able to arrange or classify the peculiar description of muscæ contingent upon congestion, amaurosis, choroid disease, or cataract.

I think the descriptions which patients give of the noise which they experience, depend, to a certain degree, upon their fancy, their graphic powers of explanation, and not unfrequently upon their rank of life, or the position in which they have been placed, and the sounds with which they are most familiar: thus, persons from the country or rural districts draw their similitudes from the objects and noises by which they are surrounded, as the falling and rushing of water, the singing of birds, buzzing of bees, and the waving or rustling of trees; while, on the other hand, persons living in towns or in the vicinity of machinery or manufactures, say that they hear the rolling of carriages, hammerings, and the various noises caused by steam-engines. Servants almost invariably add to their other complaints, that they suffer from "the ringing of bells" in their ears; while old women, who are much given to tea-drinking, sum up the category of their ailments, by saying, that "all the kettles in Ireland are boiling in their ears." The tidal sound, or that which we can produce by holding a conch-shell to the ear, however, is what is most frequently complained of. Sometimes the tinnitus exists as an isolated symptom; but I have remarked, that sooner or later, either aural or cerebral disease manifests itself.

Removing the cause and curing the deafness will often, but not always, relieve the patient of the tinnitus. Where it remains, relief may sometimes be got by perforation of the membrana tympani. In some cases, rubbing over the membrana tympani gently for a short time with a camel's hair-pencil, moistened with any mild ointment, will, for a while at least, remove the noise. If there is any medicine which acts specifically on tinnitus aurium, it is arnica.

SECT. II.—DISEASES OF THE RESPIRATORY SYSTEM.

ART. 8. — *On Effusions into the Pleural Sac, and their Treatment by Paracentesis Thoracis.* By W. PEPPER, M.D., U. S.

(*American Journal of the Medical Sciences*, Jan. 1825.)

[After the detail of four cases, Dr. Pepper concludes with the following practical commentary:]

The operation of paracentesis thoracis has at all times been viewed with more or less distrust by many distinguished members of our profession; and although this prejudice is now rapidly disappearing, owing to the numerous instances in which the most beneficial results have followed the operation, there still remains much discrepancy of opinion as to the particular circumstances under which this procedure

is justifiable. And, indeed, it will be found upon impartial investigation, that most of the disastrous results consequent upon it are fairly attributable to a want of proper discrimination in the selection of cases. Formerly, when the profession was in a great measure ignorant of the physical signs indicative of effusion into the pleural cavities, it is not surprising that numerous instances of erroneous diagnosis and consequent faulty practice should have occurred; such as puncturing an enlarged liver or spleen, or medullary tumour, under the impression that fluid existed in the thoracic cavity; or even opening the sound, instead of the diseased side, when such effusion absolutely existed, and thus giving rise to collapse of the healthy lung, and consequently to speedy dissolution. But now that the physical signs are known to afford great certainty in determining the extent and character of thoracic disease, such errors cannot occur, except as the result of culpable ignorance or carelessness; and it is owing to the great improvement in this department of our science that the operation of paracentesis is beginning to be viewed with more favour by the profession.

It would be a work of supererogation, at the present time, to enter fully into details in regard to the physical signs indicative of intra-thoracic effusions, and my remarks under this head shall, therefore, be as brief as possible. Dulness on percussion is one of the most important indications of such a condition, and it exists to even a greater degree than in pneumonia, whilst at the same time the elasticity of the chest is entirely destroyed; in those cases where the pleural sac is not filled with fluid, the line of dulness can generally be varied by changing the position of the patient; occasionally, however, the fluid is limited by adhesions, and therefore, uninfluenced by position. The distension of the chest should next claim our attention: in some instances, the circumference of the diseased side will exceed the healthy by one or two inches; whilst at the same time the intercostal spaces may be distended or bulging. In extreme cases, the heart will be displaced to the right or left, and the liver depressed by the superincumbent fluid. The absence of all vocal vibration also, constitutes an important indication. In like manner, auscultation is all important in forming our diagnosis; thus, when the fluid is not considerable, a distinct ægophonic resonance of the voice, and a peculiar modified bronchial respiration, can generally be heard over the back, and even in the axillary region; whereas, when the accumulation is very great these phenomena entirely disappear, or, at most, can only be heard over the root of the lung; where most of the above signs coexist, as is generally the case when there is an extensive effusion, it would be quite impossible to fall into any serious error as to the true nature of the disease. At the same time, however, it is important to attend to the previous history and accompanying functional disorders; such as dyspnœa and inability to lie on the sound side, paucity of cough and expectoration.

That there are cases of effusion, puriform or otherwise, which are not manifested by the above symptoms must be conceded; as, for instance, when the fluid is confined between the lobes of the lung, or between the latter and the diaphragm; and it is also well known, that

when the effusion is but moderate and of gradual formation, no marked dyspnœa is induced, nor are the viscera displaced, or the side distended. It may happen in cases of local effusion, and where partial absorption has taken place, that the chest may even be contracted; but under the above circumstances paracentesis is not called for, and no objection can, therefore, be urged against this operation from these occasional difficulties in diagnosis. Encephaloid degeneration of the lung has, in several instances, been mistaken for empyema; and when we bear in mind, that in this latter affection, the percussion may be perfectly flat, the side distended and elastic, the viscera dislocated, and all respiratory sounds and rales entirely absent, it must be confessed, that much discrimination is necessary in forming our opinion as to the true nature of the case. In one instance, where "the question had been agitated as to whether paracentesis of the chest might be advisable," Dr. Stokes was enabled to pronounce upon the cancerous character of the affection mainly by the varicose condition of the veins of the diseased side, and the currant jelly-like sputa, in connection with the previous history of the case. These peculiarities do not always attend cancerous degeneration of the lung; and, moreover, it should be remembered that the disease is frequently complicated with empyema, rendering the diagnosis more and more obscure. The fact, that encephaloid degeneration of the lung is generally associated with tumours of a similar character occupying the mediastinum, and pressing upon the important organs contained in this region, will of itself frequently enable us to form a correct diagnosis; since, under these circumstances, we have violent pain in the neck or shoulder, with œdema of the face, chest, and arm, in connection with dysphagia, hoarseness, and other symptoms caused by the pressure of the tumour. Moreover, cancer of the lungs is commonly attended with that peculiar condition of the system denominated cancerous cachexia; and not unfrequently we, at the same time, find malignant tumours occupying some of the external parts, as the glands of the neck or sides of the chest; the previous history of the case will also greatly aid us in forming a correct opinion as to the true nature of the disease. The only other affection of the lung likely to be confounded with empyema is chronic pneumonia; but in this disease the pulmonary induration is clearly indicated by the increased vocal resonance and vibration, want of distension of the side, viscid sputa, and mucous rales.

Enlargement of the liver has occasionally been mistaken for empyema; but such an error could always be avoided by strict attention to the physical signs already enumerated, such as dislocation of the heart, prominence of the intercostal spaces, and bronchial respiration at the root of the lung; besides which, the previous history and accompanying symptoms could not fail to remove any remaining doubt. These two affections are, however, very frequently associated; for not only is the liver depressed in empyema by the superincumbent fluid, but, owing to the pressure of the collapsed lung and fluid upon the ascending cava, preventing a free return of venous blood to the right auricle, it is also frequently much engorged. This condition, according to Dr. M'Donnell, (*Dublin Journal of Med. Sci.*, 1844,) occurs as well in empyema of the left as of the right side, and is owing to the supplementary action

imposed upon the liver by the imperfect decarbonisation of the blood in the lungs. Whatever may be the true explanation of this congestion, its existence certainly forms an important feature in the history of empyema, particularly in reference to the operation of paracentesis. The above author, also, reports several cases of "pulsating empyema" of the left side, where the puriform matter in the external cellular tissue communicated with the intra-thoracic abscess, and thus received the indirect impulse of the heart. Under such circumstances, it is conceivable that these pulsating swellings might, by the careless observer, be mistaken for an aneurism, or a cancerous tumour; but the locality of the swelling, its fluctuation, the absence of thrill and rasping sound, in connection with the extensive dulness of percussion and other physical signs of empyema, would at once distinguish it from an aneurism; whilst the absence of the cancerous cachexia, and of the peculiar elasticity so characteristic of medullary tumours, would clearly show its non-malignant character. A mere abscess of the cellular tissue not communicating with the cavity of the thorax could hardly be mistaken for empyema, since it would neither be increased by cough or diminished by pressure, as is generally the case when the external swelling forms but a part of the intra-thoracic effusion. In like manner, by attending to the physical signs, functional disorders, and previous history, an hepatic abscess can readily be distinguished from empyema.

[The association of tubercle is a cogent contraindication to the operation, if contemplated as a curative and not simply as a palliative measure. On this point the author observes:]

Pulmonary tubercles are so frequently associated with empyema, that it becomes exceedingly important to direct our attention to this complication, particularly when paracentesis is proposed, since the ultimate success of the operation must, in a great measure, depend upon the perfect integrity of the lungs. When the tubercles are numerous or softened, giving rise to solidification or vomica, the true state of the case is at once revealed by auscultation and percussion; but on the other hand, when they are small and disseminated, their presence is not indicated by any marked physical signs, and we are then obliged to rely more upon the previous history and general symptoms. It is worthy of observation, however, that in uncomplicated empyema, the lung of the sound side, owing to its supplementary action and increased determination of blood, is generally more or less congested; and it is, hence, no uncommon occurrence to find the respiratory murmur, in a measure, obscured by various râles, which might readily induce the belief that the disease was complicated with bronchitis or tubercles; under these circumstances, the expectoration occasionally becomes puriform, (owing, as it has been supposed, to a species of vicarious action,) and thus tends to confirm the erroneous impression. At other times, the puriform sputa may proceed from a fistulous opening between the pleural cavity and the bronchial tubes of the compressed lung; in such cases, however, the pleural sac generally contains more or less air, as evinced by the tympanitic percussion, and the peculiar gurgling induced by succussion. Under these circumstances, it becomes important to ascertain whether the

fistula has been caused by tubercular perforation, or by the corrosive action of the pus in the pleura. When it can be ascertained that the patient, after suffering for some time with cough, or other symptom of pulmonary irritation, has been suddenly seized with acute pain in the axillary region, followed by extreme dyspnœa, we may reasonably conclude that any pleuritic effusion consequent upon such a seizure has been the result of tubercular perforation; whereas, when the symptoms of pleurisy have occurred in the midst of perfect health, followed by a gradually increasing difficulty of breathing, and, at a still more remote period, by a sudden and very copious discharge of pus from the lungs, there can be but little doubt that the fistulous opening has been caused by the empyema bursting into the bronchial tubes. In those cases where the disease had been observed throughout, the physical signs would prevent all error upon this point. In connection with the diagnosis of empyema, it is important to observe, that, when this disease is complicated with pneumothorax and purulent expectoration, it by no means follows that a fistula of the lung necessarily exists; the air in the pleural sac may be evolved by the unhealthy pus, and this is particularly the case where there is necrosis of the ribs.

[Speaking of an important element in diagnosis, the author proceeds:]

It still remains to be considered whether there are any means by which the character of the pleuritic effusion can be positively ascertained. The mere intensity of the symptoms is no evidence of puriform effusion, since this may result from a low grade of inflammation, whilst, on the other hand, the most severe forms of pleuritis frequently end in effusion of serum and lymph; nor is the long duration of the effusion any proof of its puriform character, inasmuch as it is well known that serum may remain in the pleural sac for many months without undergoing any important change. Hectic fever has always been considered as more or less characteristic of empyema, but occasionally this disease exists without any considerable constitutional irritation; so that, from the previous history and general symptoms alone, we could but arrive at a probable opinion; more positive indications, however, may be derived from simple inspection of the chest. In cases of empyema, the lower intercostal spaces are frequently bulging to a much greater extent than ever occurs in hydrothorax, whether mechanical or inflammatory; whilst, at the same time, the superficial veins are oftentimes distended and tortuous. These peculiarities are probably owing to the high specific gravity of the fluid distending the intercostal spaces, and at the same time pressing upon the deep-seated veins, thus obliging the venous blood to return to the heart by a circuitous route. Dr. Stokes believes that the intercostal bulging depends more upon imperfect innervation or paralysis of the muscles than upon the mere pressure of the pus; Dr. Roe is also of the opinion that a moderate amount of pus may by its irritating properties cause a relaxation or paralysis of the intercostal muscles, so as to give rise to a greater degree of distension than could be produced by the pressure of a much larger quantity of serum.

[In reference to the cases suitable for the operation of paracentesis, the author remarks:]

In uncomplicated cases, and where the amount of pus is so considerable as to cause much distress, we see no good reason why the operation should be delayed. The chief objection urged against paracentesis is the alleged injurious effects resulting from the admission of air into the pleural sac; but it is now generally conceded that all apprehensions on this point have been, in a great measure, unfounded. In twenty-four cases reported by Dr. Roe, the admission of air produced no detriment, either by its pressure or decomposing influence, and numerous cases of a similar character might be collected from the different periodicals; this view is also in a measure confirmed by the well-known fact that in traumatic pneumothorax, from fractured rib or clavicle, the air produces no injurious effect, but is gradually absorbed as the cicatrised lung becomes inflated and restored to its natural position. But even supposing that the objection thus urged was valid, it certainly could be applied with equal force to the fistulous openings resulting from the corrosive action of the pus when abandoned to itself; when the lung has thus been perforated it is no longer susceptible of expansion, but must remain collapsed until the fluid contents of the pleura are discharged, and the fistulous opening healed; on the other hand, when the pus has worked its way externally through the intercostal spaces, the openings are often tortuous or ragged, easily obstructed, and frequently associated with necrosis of the ribs. An appeal to facts also shows that the operation is fully sustained by experience: of sixteen cases of empyema, reported by Dr. T. Davis, in which paracentesis had been performed, twelve recovered; and of forty-four cases collected and reported by Dr. H. Roe, in the 'Medico-Chirurgical Transactions,' vol. xxvii, the operation proved successful in thirty-two instances, showing that more than two thirds, or nearly three fourths of the whole number recovered. Besides those just alluded to, numerous other successful cases have recently been reported in the various journals both of Europe and this country; and amongst the advocates for the operation may be enumerated many of those best qualified to form a correct opinion in thoracic diseases, such as Forbes, Stokes, Williams, Watson, and numerous others equally entitled to respect upon this subject.

When, however, the empyema is attended with a fistulous opening of the lung, sufficient to allow the pus to escape freely by expectoration, paracentesis is certainly not called for; but when the opening is small, or so obstructed as to prevent the free passage of the fluid, and thus give rise to increased oppression, a counter-opening in the side is clearly indicated; by this procedure not only will the pus be more rapidly and safely evacuated, but the perforation of the lung may heal, and thus allow the collapsed organ to regain its natural dimensions. When tubercles exist, with or without perforation of the lung, the expediency of the operation is, to say the least, extremely doubtful; and the most that can be hoped for from it, under these circumstances, is a temporary prolongation of life. Much of the disrepute which is by some attached to paracentesis-thoracis can, in a great measure, be traced to the fact that cases similar to those just referred to, have but too often been subjected to this operation.

[The author next speaks of paracentesis in acute hydrothorax.]

It is well known that, as a general rule, pleuritic effusions can be removed by appropriate treatment, such as bleeding, calomel, squill, and digitalis, the various hydragogue cathartics, diuretics, diaphoretics, and blisters; but, occasionally, all these means fail to promote absorption, whilst at the same time the effusion is gradually increasing and threatening a protracted and agonising death; in such instances nothing but a resort to paracentesis can save the life of the patient, and it is incumbent upon the physician to recommend its performance before the powers of life have so far failed as to prevent the system from rallying after the removal of the fluid. In Europe, and particularly in France, this operation is frequently adopted in cases of extensive and recent pleuritic effusion, and it must not be concealed that, in some instances at least, there is reason to believe it has been resorted to prematurely; but, whilst in this disease as in croup, the operation should only be viewed as a dernier resort, it is still important that it should not be delayed until asphyxia has so far progressed as to materially interfere with its ultimate success. In many cases of inflammatory hydrothorax, the pleura is completely invested by a thick layer of lymph; and, under these circumstances, it is apparent that the fluid contents can be but slowly absorbed, or may even become as it were encysted, and there remain for many months or years without undergoing any important change; in such cases, though delay may not lead to ulceration of the lung or necrosis, as in case of empyema, it is evident that but little is to be hoped for from our therapeutic agents or the expectant plan of treatment; and that, therefore, paracentesis should be resorted to whenever the oppression is very considerable, more especially so, since the longer this operation is deferred the greater will be the difficulty in the lung regaining its natural position.

Dr. Roe reports in all, some twenty-six cases of inflammatory hydrothorax, in which paracentesis had been performed, and of these seventeen recovered; showing, at least, that this procedure is not as hazardous as has been by some supposed. Other instances might be adduced to show that a timely resort to the operation might, in most instances, save the life of the patient.

In mechanical hydrothorax, where the effusion depends upon disease of the heart, or forms but a part of general dropsy, as in the advanced stage of granular degeneration of the kidneys, nothing but temporary relief could be expected from tapping the chest; the effusion here forms but an accidental complication to a more serious disease which has already impaired the powers of life; and hence it is, that paracentesis is attended with much danger under these circumstances. Dr. Davis reports three cases of this character, in all of which the operation proved fatal; other fatal cases have also been recorded; and hence this practice has been in a great measure abandoned in this form of hydrothorax.

[In regard to the operation itself, the author observes:]

Some discrepancy of opinion still exists as to the exact locality where the puncture should be made; but it is now generally conceded, that the most eligible position is in the fifth intercostal space, about

midway between the sternum and spine, or just posterior to the digitations of the serratus major; this part of the chest being generally most free from adhesions, and at the same time sufficiently remote from the other important organs. When the fluid points externally, constituting "empyema by necessity," the puncture may be made with a lancet in the most prominent and yielding part of the swelling; but, in all other instances, a small sized trocar, such as is used for tapping in hydrocephalus or hydrocele, should be preferred, the point of the instrument being exceedingly sharp, so that the false membranes which occasionally line the costal pleura, may not be carried before it, and thus frustrate the operation. By some, it is recommended that the fluid should be removed as far as practicable at the time of the operation; and with this view, it is urged, that pressure should be made over the epigastrium and side of the chest; but, in regard to this question, much must depend upon the condition of the patient, the character of the fluid, and duration of the disease. When the lung is much compressed and bound down by false membranes, it would not be desirable, even were it practicable, to draw off all the fluid at once, nor would it be prudent to pursue this course in feeble and exhausted subjects; the most that should be done under these circumstances, would be to allow an escape of fluid sufficient to remove the tension and oppression caused by the displacement of the mediastinum and diaphragm, the rest being allowed to flow off from day to day in accordance with the contraction of the chest, the expansion of the lung, and the rallying strength of the patient. In recent cases of empyema or serous effusion, and where there is good reason to believe that the lung is neither carnified or bound down by lymph or false membrane, the fluid may be evacuated at once, since the lung will gradually rise as the superincumbent pus or serum is removed. So long as any pus remains in the cavity of the pleura, the puncture will generally remain open; and it will also be found, that as the tension is removed, the external orifice will no longer correspond with the opening through the intercostal space, so that it is not necessary to render the integuments tense before making the puncture, as has been recommended with the view of forming a valvular opening, and thus preventing the entrance of air. Occasionally, however, the opening is disposed to close, and, under these circumstances, it is expedient that the orifice should be dilated by a small piece of waxed sponge or lint secured by an adhesive strap: some, on the other hand, have preferred that it should heal, and the operation be repeated from time to time, according to the necessity of the case. In case of more serous effusion, there can be no doubt as to the propriety of allowing the puncture to close; for, under these circumstances, the fluid that may remain will frequently be absorbed, or, at least, it can have no injurious effect upon the lung or ribs, as in the case of puriform matter; nature also appears to point out this course, since, in most instances where the chest has been punctured for serous effusion, the wound has promptly healed; whereas, in cases of empyema, it has been known to remain open for many years without very materially interfering with the general health. With the view of effecting a radical cure in cases of chronic empyema, it has been recommended

to inject the pleural sac with various astringent or stimulating fluids, such as decoctions of white oak bark, or solutions of iodine; in several instances the fluids thus injected have appeared in the expectoration, owing to the existence of a fistulous communication between the bronchia and pleura, and yet the patients have ultimately recovered.

ART. 9.—*Diagnosis of Phthisis Pulmonalis.* By M. VALLEIX.

(*British and Foreign Medico-Chirurgical Review*, Jan. 1852.)

[We extract the following table from a review of several standard German and French works on diseases of the respiratory passages. Valleix adopts the arrangement of Laennec and Louis, dividing phthisis into two periods or stages.]

I. *Positive signs of phthisis at an early stage:*

Dry cough for some time; sometimes mucous expectoration.
More or less dyspnœa.
Pain in the chest.
Nocturnal sweats.
Debility and emaciation.
Dull percussion under one or both clavicles.
Weakness or other modifications of respiratory murmur.
Hæmoptysis in a considerable number of cases.

II. *Positive signs at the end of the first stage:*

Cough more frequent.
Expectoration of grey, opaque, or greenish sputa.
Hæmoptysis.
Night sweats.
More or less diarrhœa.
Emaciation more marked.
More dulness on percussion.
Blowing respiration, subcrepitant râles, increased vocal resonance.

III. *Positive signs during the second period:*

Obstinate cough.
Sputa greyish, irregular in form, tinted or streaked with blood.
Emaciation and marasmus increased.
Dulness in percussion extended.
Tracheal and cavernous respiration.
Mucous râles, gurgling, pectoriloquy.

IV. *Distinctive signs of incipient phthisis and pulmonary catarrh:*

PHTHISIS.	PULMONARY CATARRH.
Cough dry.	Mucous expectoration.
Moist sweats.	No night sweats.
Emaciation.	No marked emaciation.
Hæmoptysis.	No hæmoptysis.
Moderate dyspnœa.	Greater dyspnœa.
Dulness under the clavicle.	Percussion normal.
Modified respiration.	Respiratory murmur normal under the clavicle.
Respiration in the posterior lobes normal.	Subcrepitant râle in inferior and posterior lobes.

v. *Distinctive signs between phthisis at the end of the first stage and chronic pneumonia.*

PHTHISIS	CHRONIC PNEUMONIA
Is developed spontaneously.	Is the termination of acute pneumonia.
Is situated in the apices of the lungs.	Is generally in the inferior and posterior lobes.

ART. 10.—*On some Injurious Consequences of the Use of Antimony in Pneumonia.* By Dr. BOLING.

(*American Journal of Medical Sciences.*)

[These are thus described:]

The patient may be seen to be doing very well under the antimony, the dulness on percussion and rapidity of pulse diminishing, the skin moistening, and the respiration improving; when, suddenly in some cases, more gradually in others, he becomes restless, thirsty, and somewhat purged, the belly becoming tympanitic and sometimes tender. He vomits, or tries to do so; the tongue is dry and pointed; jactitation and anxiety of countenance appear, together with delirium, and perhaps shortly before death, stupor. Occasionally jaundice supervenes; and in a few cases the matter ejected closely resembles that of yellow fever. During these occurrences, the pulse becomes frequent, hard, small, and thready. Death may take place within six hours after the first appearance of these unfavorable symptoms; more frequently it is delayed for ten or twelve hours, and, in some cases, yet longer.

Simultaneously with the advent of the above symptoms, or just preceding them, there is a more or less rapid disappearance of the symptoms of the original disease. A lung which seemed almost completely solidified, in four or five hours becomes permeable, and yields a healthy respiratory murmur—all the symptoms of the pneumonia undergoing a similar improvement. The violence and rapidity of the abdominal disease are in direct ratio to the suddenness of the improvement in the disease of the lung. In any case of pneumonia treated by antimony, the supervention of the least tympanitis, thirst, and diarrhœa, must be looked upon with suspicion, as the probable precursor of this serious condition; and Dr. Boling regards the patient's doom as almost decided, when, in addition to these symptoms, there is a *rapid* in place of a *gradual* diminution of dulness on percussion, *unattended with the crepitant râle of resolution.* The observance of this peculiarity in the physical signs has enabled him to announce portending mischief in patients apparently convalescent.

This cannot be a rare occurrence in the Southern States of America, as the author has seen almost as many die of the induced as of the primary disease. He suspects that some of the cases described as loss of tolerance of antimony by the Italian practitioners, are of this nature; although, if so, their delineation is very incomplete. Gölis gives a graphic account of a similar train of phenomena produced by the use of large doses of calomel in hydrocephalus and croup.

Dr. Boling is disposed to attribute this effect of antimony to its direct action on the intestinal canal, by reason of a portion of the quantity administered not becoming absorbed; and believes that our object, in attempting its prevention, should be to administer the drug in such divided doses as to secure its complete absorption. Although never in the habit of giving very large doses, he has even diminished these; and finds the remedy just as efficacious now that he gives only from three to six grains in the twenty-four hours, as when he gave double the quantity, while the mischievous effects have been of much less frequent occurrence. He dissolves the above quantity in six ounces of water, and gives a teaspoonful every half hour in the day, and two teaspoonfuls every hour at night. He prefers water as a vehicle, as mucilaginous fluids delay the absorption of the medicine. More recently, he has administered the medicine in somewhat larger doses, as an enema with good effect.

SECT. III.—DISEASES OF THE CIRCULATORY SYSTEM.

Art. 11.—*Observations on the Impulse of the Heart.*
By Robert Cartwright, Esq., Surgeon.

(*Lancet*, Dec. 20, 1851.)

The cause of the impulse and sounds of the heart still lies in the greatest obscurity; each successive writer brings forward, like an advocate defending a bad case, an ingenious and fine-spun theory, merely to be torn in pieces by his successor. This extraordinary discrepancy appears to the author to proceed from the fundamental error, that the impulse occurs during the systole; and the difficulty can, in his opinion, only be solved by returning to the theory formerly advocated by Drs. Corrigan and Stokes.

The theory that the impulse takes place during the contraction of the ventricles rests entirely on vivisections and experiments on dead hearts; Mr. Cartwright is not aware that a single physiological reason has been advanded in favour of it. All those experiments led to the following conclusion, "that the heart during its contraction is elongated, and strikes against the chest by raising the apex:" but latterly it is generally agreed, that the heart during its contraction is shortened, (a fact the author knew twenty years ago,) and that the appearances in those experiments were misunderstood and incorrectly explained: consequently, the author observes, if the conclusion drawn from those experiments is erroneous, the theory based on that erroneous conclusion naturally falls to the ground. The latest theory is Dr. Kiwisch's "that the impulse is caused by the swelling of the muscular substance of the heart during its contraction;" but this explanation, the author says, is untenable, as the external layers of muscular fibres are spiral and not longitudinal; consequently, their contraction, being concentric, simply diminishes the cavity of the heart without any swelling or external elevation, as in the muscles

of the extremities; but granting that there is an external swelling, the diminution at the same time in the circumference will prevent any nearer approximation to the surface of the chest; and granting, again, that an impulse were produced by such a swelling of the muscular substance, it would occur in the third or fourth, and not in the fifth intercostal space.

In 1830, being then a student in Dublin, Mr. Cartwright heard of Dr. Corrigan's theory, that the impulse occurs during the diastole. On returning home, he opened a rabbit, and not wishing to cause the animal unnecessary pain, he gave it a gentle rap on the head, sufficient to cause a depression of the bone. On opening the chest, he saw the heart beating quietly and regularly; after about half a minute, it became agitated, and during these agitated movements the heart appeared to be elongated, and its apex to be turned upwards, at the same time giving a kick, as it were—an expression much in favour with lecturers on anatomy twenty years ago. After about a minute the action of the heart became quieter, and the last movements resembled the first. A month ago he examined two rabbits under the influence of chloroform; no irregular or spasmodic action occurred in either case; the heart appeared to dilate and contract in its natural manner. During its contraction the heart was evidently shortened and narrowed—that is, less in circumference; the apex was somewhat flattened, and appeared once to be actually drawn inwards; but during the diastole the apex shot out again with some force. These appearances are in perfect harmony with the anatomy of the muscular substance of the heart; the muscular substance of the left ventricle, for instance, may be to a considerable extent separated into two layers,—an internal, consisting of longitudinal fibres, running from the apex towards the basis, and an external, consisting of a network of fibres, running principally in a spiral direction. The contraction of the longitudinal fibres shortens the heart, and their consequent swelling fills up the space previously occupied by the blood driven out by their contraction; at the same time the spiral or circular fibres, by their contraction, force out a certain quantity of blood, and press in relative proportion the internal surfaces towards one another, so that a contracted heart is shorter and less in circumference than a heart dilated and full of blood; and as the heart lies in a sloping direction from above downwards and forwards, and with a part of its surface in close apposition to the inner surface of the chest, the author concludes that the impulse occurs during the diastole, when the heart is increased not only in length but also in circumference, and consequently presses closer to the inner surface of the chest than it does during the systole.

The following case, about a child a few days old, and in which the sternum was deficient, is reported by Dr. Skoda:

"By applying the hand one could easily perceive that the heart was vertically placed, and moved with each systole downwards and forwards, with each diastole upwards and backwards. The impulse was felt with each systole of the heart, immediately above the insertion of the diaphragm; with each diastole, on the contrary, as high as the second rib, if the fingers were sunk sufficiently deep towards the spinal

column. The impulse of the diastole was just as strong as the impulse of the systole. On placing two fingers in such a manner, so that with the systole the lower, with the diastole the upper, finger felt the impulse, it was found that the heart, during each systole, glided about an inch downwards." There can be no doubt that Dr. Skoda has here made a slight mistake between systole and diastole; it is quite past the author's comprehension, how a heart during its contraction could move downwards and forwards, and during its dilatation, upwards and backwards; and how the impulse of the heart, shortened by its contraction, could be felt immediately above the insertion of the diaphragm; and during its dilatation, when it is not only increased in circumference but also in length, an impulse should be felt nearly under the second rib, and then only by sinking the finger sufficiently deep towards the spinal column; it would almost seem that Dr. Skoda had recorded this case in anticipation, as a refutation of Dr. Riviset's theory, and as a proof of the diastolic theory. Dr. Albers, in his work, principally compiled from Davies's Lectures, states, that the heart must elongate itself several lines, so as to produce the impulse in the fifth intercostal space.

Mr. Cartwright believes that the ventricle acts as a sucking-pump, and sucks the blood in; its dilatation being quite independent of the contraction of the auricle, which is proved by the following experiment: he cut the auricle through, the blood flowed into the chest, and the ventricle dilated several times afterwards. The heart also pulsates after it is cut out and placed on the table. This active dilatation of the ventricle is caused by the elasticity or tone of the muscular fibres. What he undertands by the elasticity or tone of the muscular fibres is the power by which they return to their natural position; thus if a muscle is stretched by an abscess underneath it, or by any other cause, on removing the cause, the muscle immediately returns to its natural position. This act is not contraction in its usual meaning. Also when a muscle, be it a voluntary or involuntary one, contracts, this occurs through the agency of a higher power; and when this power ceases to act, the fibres of the muscle do not remain relaxed in the same identical position, but return with a certain degree of force to their natural position. This is apparent in the biceps humeri, but still more so in the vastus internus and the gastrocnemii. This action —namely, the muscle returning to its natural position from a state of contraction or extension—depends on a principle resident in the fibres themselves, call it elasticity, tone, or by any other name; and it is through this principle that the dilatation of the heart takes place.

The semilunar valves are never pressed against the sides of the artery, otherwise they would be retained in that position by the continuous stream of blood; and it also appears to the author, from observations on the hearts of animals in a state of spasmodic contraction after death, that certainly not more than half of its blood is expelled out of the left ventricle during each systole. With reference to the sounds of the heart, he states that the first is heard most distinctly at the apex; it appears to come towards the ear; whilst the second is acknowledged to arise at the semilunar valves, and to be

carried along the aorta; this harmonises completely with the diastolic theory; while the first sound is caused by the passage of the blood through the auriculo-ventricular opening and the valve towards the apex; and the second sound is caused by the forcible propulsion of the blood through the semi-lunar valves. The bruits in diseases of the heart are also more naturally and correctly explained by this theory, as may be proved by an analysis of the various treatises on auscultation, especially the admirable Treatise by Dr. Skoda, (fourth edition, 1850, Vienna,) a work no one can read without feeling the highest esteem for the candour and logical acumen of the learned professor. But it is not necessary to make vivisections or experiments on dead hearts; every man carries in his own breast evidence sufficient to prove that the impulse occurs during the diastole. The author has himself made the following experiment several times; if a person lies in bed on the left side and listens attentively, he can hear the second sound most distinctly; should his heart palpitate or beat somewhat violently, he will feel at the same time, synchronous with the second sound, a shock or concussion in the chest, extending even to the carotid arteries.

Mr. Cartwright remarks further, that each contraction of the ventricles causes one pulsation throughout the arterial system, before another contraction takes place; and as the arteries are elastic tubes, a certain interval or space of time, be it more or less, elapses, before the pulsatory wave, caused by the contraction of the left ventricle, reaches the extremities of the arterial system. The carotid artery, just before its bifurcation, may be considered as a middle point between the heart and the capillaries in the brain; consequently the pulse at that point ought to be intermediate between two contractions of the ventricle; and if the impulse of the heart is caused by its dilatation, it ought also to occur in the interval between two contractions of the ventricle, now the impulse of the heart and the pulse of the carotid are synchronous. This explanation also accounts for the impulse not being synchronous with, but immediately preceding, the pulse at the ankle. Mr. Cartwright concludes, therefore, that the impulse of the heart takes place during the diastole.

Art. 12.—*Treatment of Rheumatic Pericarditis.*

By J. Risdon Bennett, M.D.

(*Lancet*, 1851, p. 541.)

The following is an abstract of a paper read at the Medical Society of London, upon a subject somewhat disputed at the present time. The author observed, that whatever opinion may be entertained as to the precise nature of acute rheumatism, it has been long and generally admitted that the articular inflammation has peculiarities which distinguish it from ordinary inflammation; and this conviction has very generally guided our treatment of the local affections, apart from other and more important considerations. When, however, a case of acute rheumatism has become complicated with local inflammation of internal organs, it has usually been the practice

to treat these local internal inflammations much in the same way as if they had not occurred in connection with rheumatism. If, however, we look on them, not as exceptional or accidental complications, but as having a common origin with the external inflammation, it would be natural that our treatment should be guided by the same considerations which influence us in the local treatment of the arthritic affections. If the affections of the joints be but the local manifestations of a general disease of the system, or, in the phraseology of the day, of a blood disease, there is much reason for viewing the pericarditis and pleuritis, which are so apt to supervene, in the same light. And thus if, in reference to the relief of the articular pain and tenderness and swelling, we are guided by general considerations, and trust rather to constitutional remedies than to local measures, ought not the same considerations to guide us in the treatment of the local symptoms occurring in conjunction with the internal inflammations? It is, of course, readily granted that the vital importance of the heart, or even the pleura, is far greater than that of the knee- or elbow-joint. There is an urgent necessity for speedy relief in the one case, which does not exist in the other. We may be fully authorised in the use of means for the relief of the one, which, from general considerations, we may not be warranted in employing in the other. Still, if our general pathological views be correct, they should undoubtedly influence us most materially in our attempts to relieve even the most urgent symptoms connected with a vital organ. And, *à fortiori*, we should not be too hasty, in the slighter forms of these internal affections, in having recourse to remedies of questionable propriety as regards the general treatment of the disease. Dr. Bennett stated that it was not his purpose to offer any evidence in support of the view which considers acute rheumatism as a blood disease, nor to attempt to define in what respects rheumatic differs from other forms of inflammation; but submitted that the commonly occurring internal inflammations are as much a part of acute rheumatism as the arthritis, and that the one as much as the other participates in the peculiarities, whatever they may be, of rheumatic inflammation. The profession, he said, was much indebted to Dr. John Taylor for his valuable investigations on the subject of pericarditis. His researches have fully shown the important relation that subsists between pericarditis and other blood diseases than rheumatism, and more especially Bright's disease. Putting rheumatism out of consideration, it was, he observed, a remarkable and most important consideration that pericarditis is a rare affection, except in connection with some blood disease; and his own observation, and he believed that of the profession at large, fully confirmed this important pathological fact, which, the more it was considered, the more would it be found to be pregnant with important practical results. It had, however, long been doubted whether the ordinary treatment of pericarditis was worthy of the confidence it generally received; and with reference to a leading part of the treatment, it is no new thing with the disciples of that profound pathologist and sagacious physician, Professor Alison, to question the efficacy of mercury in overcoming pericarditis. Towards the solution of this question, Dr. Taylor has afforded

us much valuable information. It must, however, still be considered *sub judice*. But for its satisfactory determination it was important that it should not be mixed up with the questions of the value of mercury in the treatment either of inflammation in general or even of other serous inflammations. Here, as in many other instances, it is probable we have been misled by a general term, and by referring to the class inflammation what may be only true of some particular form. "At all events," said Dr. Bennett, "I am especially anxious to guard myself from being supposed to cast any doubt, or to offer any opinion, on the value of mercury in any other form of inflammation than that which is the subject of immediate consideration." For the present he begged to be allowed to consider simply the subject of rheumatic pericarditis, which he was willing to call by any other name, and offered the brief cases which he read as a small contribution towards the determination of a very important practical question, and as a peg on which the Society might hang not merely a discussion but additional materials. He did not intend, however, to limit the consideration of the Society to the utility of *mercury* but to the treatment of *rheumatic pericarditis* whether by mercury, depletion, or any other means. Dr. Bennett then proceeded to give the histories of four cases of rheumatic pericarditis treated in the female ward of St. Thomas's Hospital, under his care. Lemon-juice was the constitutional remedy which had been relied on in all the cases, and with this he had for some time past treated almost all his hospital cases. In the first case, admitted Nov. 6, and discharged Dec. 15, symptoms of disturbance of the nervous system, of the character of chorea, were the most prominent, and these came on with a friction-sound, and other signs of serous inflammation, probably involving both the pleura and pericardium. A purgative mixture, (into which, however, colchicum entered,) to keep the bowels open, a sedative at night, and counter-irritation, comprised the treatment till the occurrence of symptoms indicative of increase of thoracic inflammation and nervous disturbance. For these symptoms ammonia and camphor mixture were had recourse to—the application of ten leeches once—cataplasms, and subsequently counter-irritation again. Neither general nor large local depletion was had recourse to, nor mercurialisation. In answer to the objection which some might urge, that this was a slight case of pericarditis, and that many such will do well without any special treatment, Dr. Bennett admitted that the slighter pains of pericarditis do not require nor justify active interference. But it would not be speaking correctly to call this a trifling case. Both local and general symptoms presented a formidable aspect of things, which, in the eyes of many, would have justified far more formidable measures than those which were had recourse to. The second case, admitted Nov. 6, and discharged Dec. 15, was a rheumatic subject, having had rheumatism four years previously. The strictly rheumatic symptoms were severe, and the cardiac symptoms well-marked, but ceded to a few leeches, aided by cataplasms and a moderate sedative at night. The third case, admitted Aug. 20, and discharged Oct. 4, presented all the more important symptoms and signs, both local and general, of pericarditis of the most acute

and pronounced description. But as some mercury was taken in this case, and to the extent of ultimately affecting the gums, how far, it may be asked, was the recovery attributable to this remedy? In answer to this, it was to be observed—1st. That four doses only, of four grains each, of mercury with chalk had been taken in the course of thirty-six hours, when the symptoms had so much improved that the pulse had fallen from 132 to 100, and the respirations from 40 to 32. 2d. That the slight tenderness of the gums did not occur till five days after the marked change for the better. 3d. That the signs of pericarditis of the most decided character had preceded the exhibition of mercury for many days, so that here was a case of well-marked pericarditis of many days' standing which began to subside within thirty-six hours after a few doses of mercury had been taken, although the evidence of the constitutional action of that drug did not appear till five days subsequently. So far as this case goes, the utmost it says for mercury is, that it is sometimes useful as an adjunct, when *not* given so as to produce speedily and fully its constitutional effects. In this case it should be observed, that, though mercury was given, *no depletion* was employed after the patient's entrance into the hospital. The fourth case, admitted Sept. 30, and discharged Nov. 22, was a very severe and most unpromising case from the first, simply as a case of uncomplicated acute rheumatism, and when thoracic complication set in, the local symptoms were well pronounced, and associated with much distress; impeded respiration; faintness; cough; and a very rapid and feeble pulse. As regards the general character of the case, simply as one of acute rheumatism, all practical men will at once recognise the class of case by the leading symptoms present on her entrance into the hospital; the anxious, depressed look, with dirty, half-lurid colour of the face; a furred tongue, with persistent, rough, dry edges, and tip resembling the strawberry tongue of a bad case of scarlatina; frequent purging of liquid, dark, foul matters, and equally offensive, sour sweatings; a pulse of 130, and the arthritic symptoms severe. What probability was there that such a case would have borne and been benefited by active antiphlogistic or mercurial treatment for the quelling of the local disturbance which subsequently occurred? or does not experience lead us to say that such a case would very probably have sunk under the combined depressing influence of the remedies and the disease, either immediately or at a later period, with sloughing sores of the back, and colliquative diarrhœa? At all events, this case showed what may be effected by a dozen leeches, with cataplasms and opiates, without any mercury, as the last showed what might be done without any depletion. In conclusion, Dr. Bennett observed that he might have brought forward many other examples of the same kind of treatment, which had proved equally satisfactory. In all the four cases related, the patients had left the hospital either without a trace of any cardiac disease or with merely a slight systolic bruit present during excitement, and which was daily diminishing. His object had been to submit to the Society the non-necessity in a large proportion of cases, and in others the absolute impropriety, of attacking rheumatic pericarditis, either with large depletion, whether local or general, or with mercury so as to

affect the system. He was by no means prepared to recommend the abandonment of mercury altogether, but he was quite satisfied that in many cases of acute rheumatism the system could not be brought under the full influence of mercury without very materially increasing the danger. On the other hand, if we were satisfied with the general constitutional remedies that we were employing, if they were telling on the ordinary symptoms and on the general fever, there was every reason for trusting to such constitutional means, aided by the simplest and least possibly disturbing local means, when the internal sero-fibrous membranes became inflamed.

Art. 13.—*On the Curative Treatment of Aneurism of the Aorta.*

By O. B. Bellingham, M.D. F.R.C.S.

(*Dublin Medical Press*, Feb. 11, 1852.)

[In an interesting communication to the Surgical Society of Dublin, the author introduces the subject of the cure of aneurism of the aorta by some considerations which affect the rapidity of its progress. Whether this be rapid or slow will, he observes, depend on a variety of circumstances, each of which will have more or less influence on the results of treatment. These are,—1, the size of the sac; 2, its situation and the nature of the parts compressed; 3, the thickness of the parietes; 4, presence or absence of fibrine in its interior; 5, the existence or not of hypertrophy or dilatation of the left ventricle; 6, the habits and occupation of the patient.

After alluding to the manner in which each of these circumstances operates, the author proceeds to speak of the treatment. He says:]

The indications of treatment in aneurism of the aorta appear to be therefore:

1st. To diminish the distending force of the blood from within, by which the further enlargement of the sac will be prevented, and it will be placed under a favorable condition to contract.

2dly. To endeavour to strengthen the parietes of the sac by favouring the gradual deposition in its interior of the fibrine of the blood which passes through it, by which the risk of its rupture will be diminished.

3dly. To endeavour to maintain the continued deposition of fibrine in the sac until it is filled and no longer permits the entrance of blood.

4thly. To bring about these results without deteriorating the quality of the blood, or diminishing too much the patient's strength.

The immediate cause of the distension of the aneurismal sac and of its gradual enlargement, lie of course in the impetus communicated to the blood by the systole of the left ventricle; we cannot here, however, as in aneurism seated in an extremity, take off the distending force of the blood by compressing the artery between the sac and the heart; this can only be indirectly accomplished by diminishing the force with which the blood is propelled by the left ventricle, and by lessening the amount of this fluid passing through the sac; which, if we can succeed in accomplishing, the aneurismal sac will be prevented from enlarging, and if the distending force of the blood can be much lessened, the sac will probably become diminished in size in proportion.

If we look to the manner in which Nature brings about the cure of *external* aneurism, we find that this takes place in several distinct ways; but no matter how it is accomplished, the artery at the point from which the aneurism springs is almost invariably obliterated at the same time. In aneurism of the thoracic aorta, on the other hand, there is but one mode in which the disease can be cured,—viz., by the gradual deposition of the fibrine of the blood in layers within the sac until it is filled up; and the artery is never obliterated at the site of the aneurism, for an obvious reason.

If, then, we hope to succeed in curing aneurism of the aorta, we must watch the mode in which Nature brings it about, and we must endeavour to imitate it.

When a spontaneous cure of aneurism of the aorta takes place, it is always, as I have said, by the gradual deposition of the fibrine of the blood in layers within the sac until it is filled up, and no longer permits of the entrance of blood. This is also the mode in which the cure of external aneurism is brought about by compression. In order, therefore, to favour such a result in aneurism of the aorta, we must endeavour to diminish the force and the frequency with which the blood traverses the aneurismal sac, and we must likewise endeavour to lessen the quantity transmitted through it. In external aneurism these objects can be effected by compressing the artery upon the cardiac side of the aneurism; in aneurism of the aorta we can only effect them indirectly by acting upon the general circulation.

As exercise has the effect of quickening the heart's action, and rest has the opposite effect, and tends to quiet the circulation, absolute rest of body and mind are indispensable as preliminaries. Again, we know that the heart's action is less rapid in the recumbent than in the erect or sitting posture; it is essential, therefore, that the patient should preserve the recumbent posture, and be confined to bed during a portion at least of the period that the treatment lasts.

In order to diminish the amount of blood, or to reduce the force of the circulation, bloodletting has been more frequently employed than any other remedy, and probably is the oldest which has been used with this object. Now, copious or frequent bloodletting has serious disadvantages; it impoverishes the blood, removing the fibrine, the very substance, the presence of which in this fluid is essential to the cure. While if bloodletting is combined with very low diet, according to the plan long since recommended by Albertini and Valsalva, there is no possibility of the fibrine being renewed. Again, frequent and copious bloodletting not only impoverishes the blood by removing fibrine, but has the further ill effects of increasing the frequency of the heart's action and hurrying the circulation, thus occasioning the very contrary results to what we desire.

The plan of treatment termed that of Valsalva, is the one preferred by Laennec, by Bertin, and by Bouillaud. Dr. Hope, while he objects to the copious and frequent abstraction of blood advocated by the foregoing authors, recommends it within certain limits.

"The patient should in the first instance (he observes) be pretty copiously bled, from twelve to twenty ounces being drawn according to the age and strength. After this it will generally be sufficient to

abstract six or eight ounces every three to six or more weeks; the quantity being the larger and the interval shorter in those who are robust and plethoric, and who speedily reproduce blood."

Dr. Blakiston, on the other hand, is opposed altogether to bloodletting; but the grounds upon which he objects to it are different, and I cannot say that they are very intelligible. Speaking of "dilated aneurism," he observes—"The only method by which we can hope to strengthen the walls of the pouch is by inducing an *inflammatory* action in them, whereby lymph might be thrown out between the coats." In "sacculated and mixed aneurism, there would be no objection against our inducing a moderate amount of adhesive inflammation in the walls of the sac, if we were able to do so, and *à fortiori*, we should not be justified in having recourse to depletion and lowering, with the view of preventing rupture or adhesion to contiguous parts."

It appears to me that there are very few cases in which general bleeding is required; while copious or frequent venæsection is calculated to do harm rather than good, and to retard or prevent rather than promote a cure. This it does:—

1st. By removing the *fibrine*, an essential agent in the cure.

2dly. By producing a watery state of the blood, when blood rich in the solid ingredients is required.

3dly. By causing the circulation to be quickened, when it is desirable that it should be rendered slower; and—

4thly. By unnecessarily debilitating the patient and inducing an anæmic state.

Dr. Norman Chevers, in his excellent treatise on 'Diseases of the Heart,' recently published, in alluding to this point, observes—"In a person reduced by organic disease, a full bleeding, to say nothing of its influence in depressing and rendering irritable the functions of the nervous and vascular system, has the effect of removing from the body a quantity of vitalised and organic matter, which, it is probable, the weakened powers of nutrition may never succeed in reproducing; and so far from this plan of treatment having the effect of relieving the blood-vessels from distension, I believe (he adds) that in a weakly person, whose absorbents are active, the vascular system, in a few hours after a free depletion, either by the lancet or by purging, contains a large—nay, it may be even a larger,—bulk of fluid than it previously did; much watery material having been rapidly absorbed to supply the place of that which was removed."

In order to diminish the watery portion of the blood, purgatives, particularly those which cause fluid evacuations, are recommended by some writers; by others diuretics are given with the same object. "Occasional purgation, continued for a week or ten days at a time, may (Dr. Hope observes) be resorted to with great advantage after bloodletting, as it keeps down the quantity of the blood without depriving it to the same degree of its fibrine. In this view the purgatives which produce aqueous evacuations are the most suitable. The neutral salts will suffice for ordinary occasions, but when a powerful effect is required, nothing is comparable to elaterium, by which two or three pints of serum or more may sometimes be drained away in twenty-four hours. Jalap and bitartrate of potash have in a

less degree the same effect." Dr. Blakiston says—"Were we to trust to rest and sedative drugs alone, whilst we allowed the use of a nutritious diet, we should be in danger of inducing a plethoric state of the system. This, however, may be kept under by the use of saline purgatives, which will relieve the system and remove some of the watery portion of the blood, at the same time that they will not greatly diminish those parts of it which form the large mass of the solid clot."

The advantage expected from the frequent use of saline or hydragogue cathartics, is to render the blood more dense, by removing, to a certain extent, the watery portions. It is undoubtedly of importance for the success of the treatment that the blood should be as rich as possible; but would it not be more consistent with common sense, instead of endeavouring to remove the more watery parts of the blood by copious and active purgation, to restrict the patient to so small a quantity of drink that hydragogue cathartics or diuretics would be unnecessary? As every particle of fluid swallowed must pass through the current of the circulation before it can be removed by purgatives from the alimentary canal, or before it can be excreted by the kidneys, it would seem to be a much more direct and rational proceeding to diminish the drink to the smallest amount, rather than to allow the patient to drink, and then to endeavour to remove it by cathartics or diuretics. Besides, the action of purgatives, frequently repeated, is calculated to distress and weaken the patient; while their operation must in some degree quicken the circulation and prevent the perfect repose so essential towards a cure.

In order to lessen the frequency of the heart's action, or to lower the circulation, digitalis has been frequently employed. "Digitalis (Dr. Hope observes) is eminently useful in the treatment of aneurism, by enfeebling and retarding the action of the heart and arteries, and thus promoting the stagnation of the blood within the sac." As this medicine, however, in order to produce any effect upon the disease must be persevered in for some considerable time, it might prove a dangerous remedy, owing to its accumulative property; indeed, in the form of disease which we are considering, it is even more dangerous than in ordinary cases, and in my mind it ought never to be employed.

In order to favour what is called "coagulation in the aneurismal sac," different medicinal substances have been recommended. Dr. Hope advocates the use of the acetate of lead in small doses frequently repeated; "it may be given (he observes) occasionally when digitalis disagrees, or where the patient tires of that remedy, or takes a prejudice against it." Dr. Blakiston recommends the preparations of iron with the view of improving the state of the blood. There are but few cases in which either of these medicines can be necessary, while the administration of the acetate of lead is calculated to prove rather detrimental than otherwise; and as aneurism of the aorta is not cured by "coagulation in the aneurismal sac," the administration of acetate of lead with this object, even if it had the power of causing coagulation, is absurd. Indeed, if the blood were to become coagulated in the sac of a thoracic aneurism, it would place the patient's life in imminent peril; as the clot or coagulum would sooner or later be driven by the force of the current of the blood out of the sac into the aorta beyond

it, which, according to its size and firmness, it would fill or obstruct, and such an impediment to the circulation would necessarily be occasioned as quickly to cause the patient's death.

The plan of treatment which appears to me to be best calculated to fulfil the indications we have in view, is almost essentially dietetic. It consists in limiting the patient, for a given period, to the smallest quantity of fluid possible; in diminishing considerably likewise the solid aliment; in confining the patient, at the same time, to bed, and endeavouring to maintain the mind in as tranquil a state as possible. I am neither an advocate for bleeding nor purgatives (except occasionally if required), nor for diuretics or digitalis, or any of the other medicines which have been used in this disease, with the exception of opium, and this only when sleep is prevented by pain.

By confining the patient to the horizontal posture, the circulation is tranquillised, and the heart's action becomes slower. When this is combined with a small quantity of solid nutriment, and a still smaller quantity of liquid, the heart's action will become slower, and the pulse compressible, small, and soft. Its effect upon the blood will be to render this fluid thicker, as the watery portions are excreted by the kidneys and skin. Thus less blood will pass through the aneurismal sac, it will be transmitted with less force, and in a diminished stream, while its quality will be improved; all which circumstances are favorable to the deposition of fibrine in the aneurismal sac; and as the muscles are not exercised, there is no waste of fibrine in supplying them.

The diet constituted, we know, an important item in the treatment of aneurism advocated by Albertini and Valsalva, where a very low diet was combined with copious and frequent bloodletting. Some modern writers, likewise, recommend certain restrictions in this particular, but they have been content with general directions under this head. I do not think we shall be able to effect much unless precise directions as to the exact quantity and kind of food are laid down. I would limit the patient to three meals a day, the morning and evening meal to consist of two ounces of liquid, and the same of solid nutriment; the midday meal of from two to four ounces of liquid, with from two to four ounces of solid. The liquid may consist of milk or tea, the solid of bread; and at the midday meal, of bread and meat in equal quantity. No deviation from this dietary should be permitted, and it must be persevered in for a fixed period—six weeks or a month at least; when it may gradually be improved. If the patient is weighed on commencing it, and this is done occasionally afterwards, we shall have a guide as to the advisability of continuing it, or of improving it.

This plan of treating aortal aneurism is not proposed on purely theoretical grounds. I shall relate a case where it was carried out with very happy results. It is applicable not only to aneurism of the thoracic and abdominal aorta, but to all those cases where the sac springs from a branch of this vessel, and is beyond the reach of surgical interference, as to aneurism of the innominata, of the subclavian, and of the carotid at the root of the neck, as well as to aneurism of the common iliac. I may add that I have employed it but for a shorter period, with much advantage, as a preliminary to

the application of compression in popliteal aneurism. A case of the kind in which a very rapid cure took place will be found in the last volume of the 'Medico-Chirurgical Transactions.'

In a mode of treatment such as this, success will of course depend in a great measure upon the perseverance with which it is carried out. It is therefore necessary that the patient should be made aware of the dangerous nature of the disease under which he labours; as in such a case he will be more likely to submit cheerfully to the restrictions imposed upon him. Indeed, unless he co-operates with us in carrying out the treatment fully and fairly, it can never be effectually maintained.

It might be objected that the tendency of so very restricted a diet is to produce a state of anæmia; but if the treatment had the effect first of causing such a deposition of fibrine in the aneurismal sac as to check its enlargement, and to prevent the risk of its rupture, an anæmic state following would be a comparatively trifling evil, and one which admitted of being remedied; besides, if the practitioner had much fear of it, the solid nutriment might be increased earlier, and it is not likely that much opposition would be offered on the patient's part to the change.

But it appears to me that anæmia is not much to be dreaded, if bloodletting is not employed. When death has been the result of inanition, owing to stricture of the œsophagus, or to the pressure from without of an aneurismal or other tumour, we do not find that anæmia precedes it. In one of the preparations upon the table, two aneurisms are seen to spring from separate parts of the arch of the aorta, and both of them are filled with concentric layers of fibrine, which reach nearly to the orifice of communication between the sac and artery. Now, in this subject, the œsophagus was compressed so as to prevent the patient for some time from swallowing solids or fluids, particularly the former, except in very minute quantity, but he never presented any symptom of anæmia. This case, moreover, further proves that a state of inanition from deficiency of nutriment, is not only not incompatible with the deposition of fibrine in an aneurismal sac, but that it rather favours it; the patient having been almost starved from inability to swallow, yet when we came to make a post-mortem examination, we found both sacs filled with concentric layers of hard, firm, and solid fibrine.

SECT. IV.—DISEASES OF THE CHYLOPOIETIC SYSTEM.

Art. 14.—*On the Physical Examination of the Abdomen in Health and Disease.* By Charles J. B. Williams, M.D., F.R.S.

(*London Journal of Medicine*, Jan. 1852.)

Acoustic Signs—Healthy Percussion Sounds.—The acoustic signs of the abdomen are by no means so numerous or so important as those

of the chest. The movements of respiration and circulation, and the sounds of the voice, which are the chief causes of the acoustic phenomena of the chest, extend only in an inferior degree to the abdomen, and they have here neither the same facilities for developing sounds, nor the same definite relation to those which actually do occur. Borborygmi of the stomach and intestines sometimes do strike up an accompaniment to the movements of breathing or of the heart that is obvious enough, and too noisy for the comfort of the patient; but beyond the point of showing the presence of air in an intestine deficient in tone, the phenomenon is of little significance. Nor do the spontaneous movements of the abdominal viscera themselves produce sounds of much importance in diagnosis: a few instances, however, will be noticed. By far the most important class of acoustic signs, are those elicited by percussion: these will first claim our attention; and subsequently those arising from the spontaneous movements of respiration, circulation, and peristaltic action, will be briefly considered.

As on the chest, so also on the abdomen, striking with the ends of the fingers produces a sound, varying according to the condition of the walls and the nature of the parts underneath. If the walls are flaccid it may be difficult to elicit any distinct sound; and even when they are more tense, direct percussion on them yields but a muffled note, and is further objectionable as it may give pain. It is, therefore, expedient in all cases to use *mediate* percussion; by striking on a thin plate of wood or ivory, or, what answers every purpose, and is far more convenient, on one or more fingers of the left hand, closely applied to the surface. Now, as this manœuvre both obtains a hard surface from which sound can be elicited, and supersedes any deficient tension in the walls, it affords the means of testing the acoustic properties of the parts underneath, and of thus determining their physical condition. Thus, if we percuss on a finger applied over the stomach or a portion of intestine containing air, we obtain a sonorous note, which we call *hollow*, from the experience that such a sound is emitted from hollow bodies when struck; or *tympanitic*, from its resemblance to the note of a little drum. On the other hand, if we strike over the thick part of the liver, or over the stomach, or an intestine filled with liquid, or over the bladder distended with urine, the sound is dull and short, the materials underneath being incapable of receiving or prolonging the sonorous vibration. Again, there are intermediate or mixed stroke-sounds, such as those proceeding from a mixture of air and solid or liquid in the intestines; or from a layer of soft solid overlapping an intestine; and these sounds will vary in every degree, according as the aerial hollow, or the dull-sounding liquid or solid predominates.

In addition to the broad distinction between the hollow and the dull stroke-sounds of the abdomen, we shall find it instructive to analyse the hollow sounds, with the view to learn all that they can teach us of the conditions of the alimentary canal which they represent. The note resulting from percussion over the stomach on a portion of intestine will be deep and sonorous, in proportion to the extent of its hollow containing air. Thus, over the stomach distended

with air, a peculiarly loud and deep tympanitic note may be elicited; and this may extend from the left hypochondrium upwards and backwards over three or four lower ribs at the side, and downwards and forwards nearly to the umbilicus. Another frequent situation of a deep full note, yet having its own character, is in the right iliac region over the cæcum; and this note sometimes reaches upwards towards the right hypochondrium. In other parts of the abdomen, over the convolutions of the small intestines, the tympanitic note is commonly much higher in pitch; and although giving the idea of a hollow underneath, represents it as of smaller dimensions. Further, on different spots this higher note will be found to vary much in pitch and tone, from the different size and form of the cavities in the several portions of the intestinal tube.

Now although these tympanitic notes of the abdomen are subject to great variations, according to the amount of air present in each portion of the canal, yet they generally retain enough of a distinctive character to indicate more or less of the situation and condition of these parts. The fact that is most instructive is this, that each part has its proper note for the time being, however it may vary at different times. Thus, if striking on the cartilages of the lower left ribs elicits a deep hollow note, and precisely the same note is emitted on percussion of the lower ribs several inches further to the left, and of the abdominal walls some inches lower down, we know that the same hollow viscus (the stomach) occupies the whole of this extent. Possibly below the margin of the right ribs, in the same subject, percussion may produce another specimen of a deep hollow sound; but its difference of pitch or tone will show that it is seated over another cavity; and by tracing its limits we may find it extending downwards on the right side of the abdomen, in the situation of the ascending portion of the colon. Again, further down still, in the right iliac region, and stretching more or less towards the hypogastrium, we may encounter another deep-toned note, yet of a distinct pitch, proving its origin in a separate portion of the canal, most probably the cæcum. In other parts of the abdomen we detect the more limited cavities of the small intestines, which are known not only by the higher pitch of their note, but especially by its varying in key or tone over every two or three inches of surface, indicating the distinctness and limitation of their respective hollows.

It is obvious that sounds dependent on a circumstance so variable as the quantity of air in a given part of the alimentary canal, must be frequently changing their character and position, and it sometimes happens, even during examination, that a volume of air is shifted from one part of the bowel to another, or may be dispersed from the stomach by eructation. So, likewise, we may fail to find any of the deep sounds characteristic of a large body of air in any part of the abdomen, the portions present in the stomach and large intestines not exceeding those in the smaller bowels. Still these exceptions, which apply rather to healthy than to invalid subjects, do not destroy the utility of the general rule, that the deeper tones in the normal state indicate the position of the larger bowels. The best time for observing these distinctions is as long as possible after a meal; the

gaseous contents of the canal then usually bearing the largest proportion to the fluid and solid matters.

Besides the pitch or key of the hollow stroke-sounds of the abdomen, there are often other characters in them, such as a tinkling or metallic ring, or a musical or tubular note; or a modification of these, like the sound of dropping into water. These adventitious sounds are by no means significant in proportion to their loudness; and the best way to understand them and appreciate their meaning, is by tracing them to their true physical causes, as Dr. Williams has endeavoured to do with regard to the sounds of the chest.

The hollow or chest notes of the abdomen consist of one or more of the following elementary sounds:

I. The proper *Tympanic Sound*, caused by the vibration of the walls of the cavity.

II. A *Metallic Resonance*, or *Tinkling Echo*, produced by transverse vibrations of the air in the cavity.

III. A *Tube-note*, arising from longitudinal vibrations of the air in one portion of intestine opening into another of larger dimensions.

These several sounds can be produced in the cavity of the mouth also; and as this affords a ready means of experimenting on them and illustrating their nature, it will be found profitable to describe the parallel sounds thus developed.

1. With the mouth closed, and cheeks moderately inflated, if filliping percussion (mediate or immediate) be practised on one cheek, a hollow sound is elicited, consisting of two distinct notes; and by varying the distension of the cheeks, the distinction between the two is rendered still more evident. One is deeper in tone, and depending on the vibrations of the cheeks themselves, is most clear when these are moderately inflated, so as to be free to vibrate; it is fainter and raised in pitch by further inflating the cheeks, which by tightening them both shortens and quickens their vibrations. This is the proper *tympanic sound,* being produced by the vibrations of the extended walls, like those of the parchment of a drum.

2. When the cheek is percussed in the manner just described, the deeper tympanic sound may be observed to be accompanied by a note of much higher pitch, of somewhat tinkling or metallic character; and this becomes more distinct and somewhat lower in tone, on further inflating the cheeks, which has exactly an opposite effect on the tympanic sound. This acute note is like that of a china cup when struck: it depends on the vibrations of the air contained in the cavity; and these being reflected from side to side, produce a note varying with the diameter of the cavity. This is the *tinckling echo*, or *metallic note.* Like the metallic tinkling of pneumothorax, it is a true echo note, the shrill key of which is precisely determined by the rapidity with which the vibrations of the air are reflected backwards and forwards from wall to wall. Such a tinkling echo accompanies all impulses and noises communicated to the interior of smooth and free cavities containing air, and having little or no outward opening. A similar sound is heard on applying the ear to the bung-hole of a barrel, where the pitch is lower, and the reverberation prolonged; or to the mouth of a bottle of glass or india-rubber, in which it more resembles that of the mouth or intestinal canal.

3. The *tube-note* of the mouth is produced by striking the cheek with the mouth open, as for the pronunciation of the vowel O. This is the loudest and most musical of the three classes of sound, its pitch being readily determined by varying the size either of the cavity, or of the aperture at the mouth. This sound depends on the longitudinal vibrations of the air in the hollow of the mouth, which are less frequent, and the tone is deeper in proportion to its depth and smallness of the opening. It is like the tubular note of the trachea in health, and that of the large bronchi in condensation of the lung.

The hollow percussion sounds of the abdomen consists of varieties or combinations of one or more of these several elementary sounds, especially the first two. In large cavities, as those of the stomach and large intestines, the most obvious is the tympanic sound, more or less deep in tone, produced by the vibration of the walls of the cavity. But on listening more closely, or with the ear or a stethoscope applied to the abdomen when the percussion is made, the tinkling echo of the interior may often be distinctly heard, and the more so, the nearer the bowel approaches to the surface, and is in a state of distension. Where a large portion of intestine is less distended, the drum sound is deeper in tone, with little or none of the tinkling echo. On the other hand a small portion of intestine much distended, yields a high tympanic note, more or less blended with its metallic accompaniment. A small intestine containing a moderate amount of air, gives a medium tympanic note with little or no tinkling; and this is the kind of sound commonly elicited over the region of the small intestines, the note somewhat varying, as before described, over each knuckle or intestine.

It may be questioned whether the third description of sound, the *tube-note*, is ever developed in the intestinal canal, seeing that it implies that the tube is open at one end. However, Dr. Williams has sometimes elicited a note so very musical and tubular in character, generally over the region of the small intestines, as to make him suspect that it might be produced in a short tube of intestine opening into another of larger dimensions.

The tympanic note of the stomach and intestines may be further modified by the presence of liquid or solid matter in addition to the air. Thus percussion, and still more abrupt pressure over a part containing air and liquid, may cause a sound of gurgling, or obscure bubbling, in addition to the drum note; and this gurgling being accompanied by the metallic echo of the cavity, acquires the somewhat musical note, termed by M. Piorry, "humorique." Many years ago, Dr. Williams explained the cracked metal sound in the chest (*bruit de pôt félé* of Laennec) on this principle. This sound of liquid and air is most commonly heard in the region of the stomach and cæcum; but it is sometimes met with in the course of the small intestines. It is usually attended with some feeling of gurgling under the fingers; and by various degrees and kinds of pressure, the presence of the liquid may be made more obvious to the ear or stethoscope applied. The gurgling noise thus occasioned, will be observed to be more or less accompanied by the metallic echo wherever there is a considerable body of air present, and the liquid, by the noise that it thus makes, affords

an additional means of manifesting the echo; but neither in this case, nor in the analogous one of metallic tinkling within the chest, is the presence of liquid essential for its production, as was imagined by Laennec.

If there be much liquid, and little air in a portion of bowel, the tympanic or metallic sound will be circumscribed in extent, and high in pitch, usually occupying the higher part, the rest having the dead dull stroke, and the soft heavy feel of liquid. Thus the clear sound of an empty stomach, which is deep in tone in proportion to the quantity of air in it, after a full liquid meal is replaced by more or less dulness at and below the margins of the left ribs, whilst a clear and rather high-keyed tympanic note, almost tubular in character, may be heard at the lower ribs.

The soft matters which constitute the more solid contents of the alimentary canal, are calculated also to deaden the clear percussion sounds, but in a manner different from that of liquids. Rarely entirely superseding the air, they obscure, but do not destroy, the tympanic note. They however completely stop the metallic echo, the vibrations of which are as easily checked by soft and inelastic matters in the cavity, as the echo of a room is by drapery. The dispersion of a considerable amount of pultaceous matter throughout the intestines, blended as it always is with more or less gas, occasions the duller degree of tympanic resonance commonly met with in cases of torpid bowels, which may be free from the clearer and metallic notes, unless there may happen to be a large accumulation of air in any particular part. This more diffused and uniform resonance has some resemblance in tone and origin to the pulmonary stroke-sound, which equally excludes clear tympanic, and metallic notes.

It may be collected from the preceding description, that throughout the abdominal regions generally, the tympanic sounds in some of their modifications prevail, except where temporarily superseded by a considerable bulk of liquid in a part, or parts, of the alimentary canal. The tympanic or intestinal region is bounded above by the dulness caused by the liver; this, in health, extends nearly along the margin of the right ribs, and more commonly an inch or so below than above them; at the epigastrium, it frequently occupies from one to two inches below the ensiform cartilage, and meets the margin of the left ribs, and there terminates below the spot where the apex of the heart beats. But the inferior margin of the healthy liver being thin, it does not abruptly terminate the intestinal and stomachal resonance, but *shades it off* by degrees, from below upwards, into the absolute dulness of the mass of the liver. This gradual transition of the tympanic into the dull hepatic sound is an important sign of the healthy condition of the liver, and corresponds with the absence of any abrupt line of resistance in palpation of the lower margin of the organ. The shading off is more gradual in the anterior margin than at the right side, where the lobe ends more abruptly and with a thicker edge. The practice of percussion to determine the dimensions of the liver requires some delicacy of manipulation, the method of filliping mediate percussion, which the author introduced many years ago, being the most exact. If the strokes be made very gently, and carried from the absolute

dulness downwards, the diminishing thickness of the liver may be measured with great accuracy, by the increasing clearness of the sound, until the finger passes the margin, and arrives at the unobscured intestinal note.

The stomachal sound to the left of the liver has no such precise limits above it, being more apt to encroach on the mixed sounds of the heart and lung which form its upper boundary. Further to the left, the stomachal and intestinal note passes into the pulmonary, two or three inches above the margin of the ribs, there being usually a space of imperfect dulness of two or three superficial inches corresponding with the spleen.

Posteriorly, where the pulmonary resonance at the margin of the base of the lungs terminates, strong percussion may elicit an obscure tympanic sound, which becomes clearer lower down in the loins, until it is again obscured by the iliac bones. The great thickness of the muscular walls, more or less increased by fat, renders it impossible to trace by percussion the position or bulk of the kidneys in a state of health; but their enlargement by disease does sometimes distinctly increase the dulness of the upper portion of the lumbar regions. As before stated, palpation is a far better test than percussion of the state of the kidneys.

Anteriorly, the abdominal or intestinal region is abruptly terminated by the crests of the ilia and the rami of the pubis. Above the latter, a distended urinary bladder may arise and cause a dulness, having superiorly a rounded and rather abrupt margin, one, two, or more inches towards the umbilicus, the dulness being most complete immediately over the symphysis.

Art. 15.—*On Retro-Pharyngeal Abscess.* By Dr. C. M. Allin.

(*New York Journal of Medicine,* Nov. 1851.)

[Retro-pharyngeal abscess is not so rare as might be surmised from the few notices of it by systematic writers. It may occur at all ages, from six months to senility, but most cases occur under the age of ten. In these the disease is traceable to enlargement and suppuration of the lymphatic glands, and is either acute or chronic, in the latter case generally being due to disease commencing in the cervical vertebræ. The causes are thus laid down by the author:]

Etiology. 1. Of Acute Abscess. *a. Predisposing Causes.*—Retro-pharyngeal abscess may be the result of an hereditary scrofulous tendency; or of syphilis; of long-continued habits of intemperance; of difficult dentition; or of that state of the system, and locally, of this region, resulting from various cutaneous diseases, and especially those complicated with soreness of the throat, such as scarlatina, variola, and others.

b. Exciting Causes.—One of the most common exciting causes is exposure to cold and damp air, followed by an inflammation in the pharynx itself, this inflammation proceeding to suppuration, the pus being deposited between the proper pharyngeal fascia, and the muscles of the pharynx lying upon it. Dr. C. Fleming, in an article upon this

disease, ('Dublin Journal of Medical Science,' vol. xvii,) asserts his belief that it frequently arises from acute inflammation of the small lymphatics behind the pharynx. In some of the cases, suppurative inflammation was induced by the presence of foreign bodies in the pharynx, such as a bone of a fish. M. Mondière, and M. Prion, of Nantes, have assigned "retrocession of erysipelas of the face," as the cause of abscess of this kind. In the earliest of the cases at the New York Hospital, to which I have alluded, erysipelas of the face must have coexisted with, and it is possible that it was the cause, direct or indirect, of the abscess. Stricture of the œsophagus, or of rheumatism, has been mentioned as a reason for inflammation and acute abscess in this region. Sometimes the abscess is developed without any assignable immediate cause.

2. Of Chronic Abscess. *a. Predisposing Causes.*—These are of the same character with those of the acute form.

b. Exciting Causes.—Chronic abscess behind the pharynx is referable, in nearly every instance, to caries, or to tubercular disease of the cervical vertebræ. The process of formation in *psoas* abscess is precisely identical with that connected with the upper portion of the vertebral column.

The irritation and subsequent inflammation produced by the presence of a fish bone, may be, indirectly, the origin of a chronic abscess, by producing, primarily, caries of a vertebræ. A case of this kind, the bone piercing the pharynx, and entering the body of one of the vertebræ, is recorded in the 'Lancet' for June, 1847, p. 581.

Symptoms. 1. Of the Acute Abscess.—The premonitory signs, like those of nearly all inflammatory affections of the throat, are, an undefined sensation of local uneasiness, stiffness in the back of the neck, accompanied with chilliness, followed, in a greater or less degree, by febrile excitement. These general symptoms are soon succeeded by pain and soreness in the throat, aggravated during deglutition. Febrile excitement is not, in all cases, well marked, for very frequently the feeling of chilliness is continuous. In very young children, the commencement of the disease may be attended by convulsions. Associated with the pain and soreness of the throat, there is not unfrequently œdematous swelling of the anterior and lateral portions of the neck, sometimes very extensive, and liable to occupy the attention to the neglect of the actual source of danger. This symptom is also common to this disease and to œdematous laryngitis, an affection in which it is of exceedingly great importance that an early and accurate diagnosis should be made.

As the disease advances, pain and soreness of the throat are increased; a peculiar fulness about the fauces, and a sensation as of some foreign body arrested at the base of the tongue, are experienced; deglutition becomes difficult and painful; the patient complains of excessive thirst; the respiration, at first attended with a slight snuffle, becomes laboured, irregular, sometimes hissing, at other times stertorous or roaring, or accompanied with a gurgling sound, from the passage of air through the viscid mucus, which collects about the fauces; the voice is very much changed, becoming markedly nasal, and resembling that consequent upon cleft palate; a cool perspiration,

more or less profuse, appears about the head; the face and surface of the body are pallid; the pulse is sometimes full and forcible, but always quick and very frequent. If the disease is allowed to proceed, the symptoms are rapidly aggravated. The dysphagia becomes very severe, even fluids taken into the mouth being immediately rejected, chiefly by the nostrils. The breathing is more laborious, and interrupted by frequent and convulsive paroxysms of dyspnœa, or of suffocative cough, threatening immediate death. At this stage, also, in young children, the dyspnœa is liable to produce fatal convulsions. At other times, somnolency, or perhaps coma, is a prominent feature in their case. The paroxysms are induced or rendered more severe, by attempts to swallow, or by the horizontal position, and the patient consequently maintains an erect or partially erect posture. During these attacks of suspended respiration, the face is flushed, and sometimes of a dark leaden hue, the head thrown forcibly backward, the lower maxilla projected, the lips livid and cold, the tongue often protruded, and the pulse exceedingly rapid, sometimes 130 or 140 in a minute. Should the tongue be retracted within the mouth, and the patient requested to protrude it, it is spasmodically thrust out, and returned with considerable difficulty. There is also frequently a coarse mucous râle to be heard along the course of the larynx and trachea.

Upon examining the throat, there *may be* detected more or less congestion of the internal surface of the mouth and pharynx; and, with this, there may be also swelling and redness of the tonsils, and of the epiglottis. Should the abscess extend above the level of the glottis, as is the fact in nearly every instance, a tumefaction of the pharyngeal parietes can be seen, upon which is spread out the velum of the palate. If the fore-finger be passed to the posterior wall of the pharynx, a firm, elastic tumour can be felt, commonly ovoid in shape, situated between the vertebræ and pharynx, pushing forward the latter, and, in many instances, even separating the alæ of the thyroid cartilage of the larynx. The tumour may not always be found directly in the median line, and it may involve other organs in the neighbourhood. It is almost impossible to obtain, satisfactorily, the sensation of fluctuation in this region, as but one finger can be passed down to the swelling.

When the termination is fatal, death is almost always the result of asphyxia, produced by compression upon the larynx; though it may be caused by the opening, either spontaneous, or artificial, of the abscess, its contents passing into the larynx and trachea.

2. Of the Chronic Abscess.—The chronic variety of this abscess is almost universally symptomatic of some constitutional disease, of hereditary or specific origin; and the most frequent of these is caries of the vertebræ. The symptoms which belong exclusively to it are manifested, principally, during its formation, and are similar, with a few local modifications, to those attendant upon vertebral caries generally. Among the earliest of these are stiffness and dull pain about the neck, posteriorly, increased by the movements of the head, and, in some instances, most severe in the evening and night. Very frequently these phenomena are, for a long time, overlooked or neglected, or attributed to other causes than vertebral disease, a

neglect which involves consequences of the most serious character. As the abscess becomes augmented, these symptoms become more marked, and are sometimes accompanied by partial or complete closure of the jaws. The abscess is liable to extend farther than in the acute form. The purulent matter may find its way downward, through the loose areolar tissue behind the œsophagus, even into the posterior mediastinal space, or into the lateral portions of the neck, beneath the deep fascia. In a case reported by Dr. Clark, of New Jersey, the abscess not only existed behind the pharynx, but "extended from the mastoid process along the course of the sterno-cleido-mastoid muscle of the right side, to the situation of the thyroid gland, which is fully occupied, giving the appearance of goître." All these symptoms may continue, and the abscess constantly increase in size, for an extended period, before producing any phenomena which excite alarm, and demand immediate and active treatment.

When the collection of purulent matter begins to press upon and interfere with the function of important neighbouring organs, another class of phenomena is presented. Dysphagia, increasing in severity, is followed by excessive dyspnœa, and nearly all the symptoms of acute idiopathic abscess. In the latter stages of many cases of the chronic variety, fever, of a low typhoid character, makes its appearance, and, unless it is promptly met and skilfully treated, death will inevitably ensue. The alleviation of the dysphagia, too, by opening the chronic abscess, is not always as satisfactory as in the acute form; for, by the long-continued tension, and greatly increased thickness of the posterior wall of the pharynx, its elasticity and contractile power are very much impaired, and the obstruction of the canal continues nearly as complete as before the opening.

Diagnosis.—A local examination by the eye, or the finger, or by both, will generally reveal the true character of the disease: but this examination cannot always be satisfactorily effected. This is especially true in very young children, for obvious reasons, so that diagnosis must be derived principally, if not wholly, from the rational signs: and complicated, as these sometimes are, with convulsions, or cerebral derangement, they are very liable to misinterpretation.

The disease which most resembles *acute* pharyngeal abscess, and with which, therefore, it is most liable to be confounded, in the earlier period of life, is *croup*. Very many are identical with those which occur in the course of an ordinary case of croup. There are, however, some well-marked points of difference between the two diseases. In the first place, the commencement of an attack of croup is very different from that of pharyngeal abscess. In the former, the peculiar crowing cough marks the beginning of the disease in almost every instance, and difficult and audible respiration is present from the first; in the latter, the crowing cough is never heard, and dyspnœa, increasing *gradually* in severity, is always and necessarily preceded by difficulty of deglutition, which is seldom urgent in croup. Again, in croup, the difficulty of breathing is often very much relieved when the head is low, and is not increased by external pressure upon the larynx; in retro-pharyngeal abscess, the assumption of a horizontal position is immediately attended with most severe aggravation of the

dyspnœa, and pressure against the larynx produces a similar effect, though in a less degree. In croup, the voice is at first hoarse, then weak and whispering, but always distinct; in pharyngeal abscess, there is an obstructed nasal or guttural modification.

A specimen of a singular form of retro-pharyngeal abscess, the symptoms having been attributed to spasmodic croup, was exhibited at the first meeting of the Pathological Society of London, by Dr. Peacock. "The sac of the abscess, which was the size of a small egg, was seen situated between the bodies of the upper cervical vertebræ and the back of the pharynx, not causing, however, much projection of the latter, from its being flattened in front. In connection with the anterior surface of the sac there sprang a small cyst, forming a nipple-like prolongation into the pharynx, and completely closing the orifice of the glottis. It admitted the point of the little finger, and was freely moveable, and perfectly translucent at its extremity and sides. The preparation was from an infant seven months old. The child had occasionally suffered from dyspnœa for three weeks, the symptoms having been very urgent for the last three days of its life. In the intervals of the dyspnœa, the respiration was natural, but the slightest exposure to cold, motion, or excitement, brought on a recurrence of the symptoms, which were attended, in inspiration, with a croupy sound."

Acute pharyngeal abscess may be confounded with *laryngitis*, with *œdema of the glottis and epiglottis*. The one can, however, be almost always distinguished from the other, if it be remembered that, in cases of œdematous effusion, difficulty of breathing is most urgent during an *inspiration;* while, in this form of abscess, the dyspnœa is nearly the same during expiration as during inspiration. The sensation communicated to the finger is very different. In the one case, a soft pultaceous swelling is felt just at the base of the tongue, and the epiglottis, swollen and curled upon itself, is detected with comparative ease; in the other, the tumour is hard and elastic, situated *behind* the larynx; and the epiglottis may be felt or seen entirely free from œdema. The more rapid progress of inflammation, and the total absence, or comparatively small degree, of dysphagia in laryngitis, will also aid in the diagnosis.

Chronic pharyngeal abscess has been mistaken for stricture of the œsophagus, for syphilitic ulceration of the throat, and for wry neck. Thorough exploration, then, is the great means by which this affection is to be distinguished from others occurring in the neighbourhood.

Pathology.—The appearances presented by abscess in this region do not materially differ from those of abscess elsewhere. The only peculiarity worthy of special notice is connected with the chronic variety. One of the causes of this form is scrofulous disease of the vertebræ; and it is an important fact that, while in the lumbar and dorsal regions the *bodies* of the bones are the seat of the disease, in the cervical region it ordinarily is confined to the *articular surfaces.* For this reason, in long-continued cases, in which the abscess has been opened, and the disease has not been arrested, dislocation of the vertebræ may take place, and death may be the result of laceration or compression of the spinal cord.

Prognosis.—In cases of its acute variety, if the disease is recognised, and the proper treatment employed, a favorable termination may be expected. If it passes unrecognised, and no spontaneous or accidental opening into its cavity be made, death is certain. In chronic cases, the result of treatment is not always so satisfactory. The existence of an abscess may be definitely ascertained, and immediate and essential relief afforded by opening it; yet the disease of the bones may not be benefited by treatment, but continue to annoy the patient, until dislocation, or want of nutrition, terminate the case. In chronic cases, too, the pus may extend downwards, in the loose areolar tissue behind the œsophagus, into the thorax, death being produced by an inflammation of the pleuræ and lungs, induced by this contact of purulent matter; and again, it is possible that the prognosis may be modified by the formation of metastatic abscesses in one of the important internal organs, as the liver, or the lungs.

Treatment.—The proper treatment is divided into *surgical*, or that adapted to a removal of the immediate cause of the urgent symptoms; and *medical*, or that by which the patient is restored, as nearly as may be, to his original condition.

The surgical treatment of retro-pharyngeal abscess must be the same in both the acute and chronic forms. A temporary relief to the alarming dyspnœa has sometimes been afforded by laryngotomy, performed under the idea that the disease was croup. The alleviation of the dyspnœa has been prompt, and apparently satisfactory, but a speedy return of all the fearful phenomena has given a fatal termination to the case. Tracheotomy has also been adopted as a remedy for the same symptom, but with the same ultimate result as laryngotomy, though somewhat longer delayed. These operations, therefore, at best, are only palliative in their effects.

The only method of operating from which permanent benefit can be expected, is that of a free opening into the cavity of the abscess, through which its contents may be discharged, and the immediate cause of the dyspnœa and dysphagia thereby be, partially at least, removed. This opening may be made in various ways. Dr. Allin adopts the following method:—The head of the patient being firmly supported by an assistant, pass the fore-finger of the left hand into the mouth, raise the velum palati, and press the point of the finger against the tumour. Then, with an ordinary scalpel, or bistoury, the blade being covered with adhesive plaster to within half an inch of its extremity, let a free incision be made in the median line, through the posterior wall of the pharynx, into the cavity of the abscess; withdraw the instrument, and the operation will be completed. The pain attending the operation will not be great. By making a free incision at once, the necessity of repeating the operation is avoided, and the discharge of the purulent collection is more complete and satisfactory. No fistulous track is left to annoy the patient, and the recovery is more speedy, than when only a small opening is made. Should the position of the abscess be such as to render it advisable that the incision be made at either side of the pharynx, particular care should be observed to avoid wounding the internal carotid artery, an accident which has occurred in opening an abscess of the tonsil.

The abscess being thus opened and the dyspnœa relieved, our attention must now be turned to the subsequent treatment of the case. And here we find it necessary to recur to our former divisions of this abscess into the acute and chronic forms.

The treatment adapted to cases of acute pharyngeal abscess, after the purulent matter is discharged, consists in the external application to the neck of emollient and soothing remedies, such as poultices or warm fomentations, until the urgent symptoms shall have been entirely relieved, and the quantity of discharge from the abscess shall have been much diminished. When this result has been obtained, the recovery may often be facilitated by the employment of some astringent gargle. A very excellent combination for this purpose is the following:

℞ Biboratis Sodæ, ℥ij;
Tincturæ Myrrhæ, ℥j;
Syrupi Simplicis, ℥ss;
Aquæ puræ, ℥vjss. Misce.

Generally, tonics, and in many cases even stimulants, may be required. For the fulfilment of this indication, probably no better article can be recommended than the sulphate of quinine.

This treatment, in connection with a nourishing diet, steadily persevered in, will, in almost every instance, restore the patient to his accustomed health, the time required for his complete recovery being subject to some variation.

In the medical treatment of chronic abscess behind the pharynx, our principal assistance must be derived from constitutional remedies, and these will differ according to the cause of the abscess, whether scrofula, syphilis, or caries of the vertebræ. Rest, tonics, and nourishing diet are chiefly to be relied on.

Art. 16.—*On the Diagnosis of Diseases of the Stomach.* By Dr. H. Kennedy.

(*Dublin Quarterly Journal of Medical Sciences*, Nov. 1851.)

[Dr. Kennedy, in alluding to the difficulty which occasionally surrounds the diagnosis of gastric affections, makes the following pertinent remarks:]

"If we inquire why such difficulties exist, the reason appears to be in part explained by the fact, that both functional and organic affections of this organ give rise to the same series of symptoms; and this will be made evident if we try to place the signs of organic disease in one column, and those of functional derangement in another; we shall then find that both lists contain very nearly the same series of symptoms. Pain, nausea, vomiting, flatulence, distension, pyrosis, hæmatemesis of various kinds, and other symptoms, are each and all common to either state. Hence the difficulty frequently of arriving at an accurate diagnosis. But it will be asked, are there no signs which may be considered as actually indicative of organic disease? And this leads me to notice more particularly two symptoms, on which many

place entire reliance. I mean the symptoms known as black vomit; and secondly the presence of a tumour in the stomach itself.

"As to the first of these, it appears to me that too much stress has been laid upon it as diagnostic of organic disease, for this reason, that it occurs in cases where we have positive evidence that there is none. For what is black vomit? Nothing more than exudation of blood, altered somewhat by the secretions of the stomach; and this I presume few will assert, can only take place where there is ulceration or fungoid disease. Hæmorrhage from the stomach we know can occur where there is no morbid change whatever in the mucous membrane, as in some cases of enlarged liver. I have seen cases of this nature, where the blood first thrown up was of a bright red colour, but as the attack passed off it got gradually darker, and finally put on all the characters of black vomit. Yet in these cases the mucous membrane was found healthy but congested. It is also seen in bad cases of scarlatina, fever, smallpox, and of puerperal fever; also in cases of ruptured uterus. The yellow fever of warm climates also very generally presents this symptom. Hence the conclusion appears a fair one, that this particular symptom may occur in the more ordinary affections of the stomach, where nothing but functional derangement exists.

"The second symptom, the existence of a tumour, is one of more moment, and it must be allowed that in the great majority of instances it will lead us to a correct diagnosis; yet even this symptom may deceive us; and I would call particular attention to this fact, for after some research on the matter, I cannot find that it has hitherto been noticed. The point I would observe upon is this, that a tumour may exist in the stomach, which in the progress of time may entirely disappear, or at least get into a state in which it is not palpable externally. I believe two circumstances may give rise to this state of things. In the first the tumour, so far from enlarging as the disease advances, actually lessens. This we know to be common in cases of malignant disease, as in cancer of the breast when ulceration is going on, and the same may occur when a similar disease exists in the stomach."

[Of this occurrence the author cites an example from his own experience.]

Art. 17.—*On the Nature of Diabetes.* By Dr. Bence Jones.

(*Medical Times*, and *Gazette*, Jan. 31, 1852.)

[After detailing the several tests for the presence of sugar in the urine, Dr. Bence Jones gives the following account of the present state of knowledge respecting the nature of the disease. He says:]

Having thus spoken of the tests by which sugar can be discovered, and also of the means for determining the quantity present, I come now to the nature of the disease, and to the cause of the appearance of sugar in the urine. Whence does this sugar come? This is a problem which is not yet solved. If we were guided by analogy, we should say, as milk sugar is formed by the action of the mammary glands of carnivorous animals, or grape sugar by the liver, so diabetic sugar, in

cases of disease, is formed by the action of the kidneys. Whether we shall return to this ancient view of the nature of diabetes is doubtful. At present, the inquiry into the nature of the disease sets out from a different point of view, in which the kidneys are considered as having no action whatever in the production of the disease. The most important arguments in favour of this view will be given by the following statement of the knowledge which we at present possess:—It is quite certain, that if we stop a person who is passing diabetic urine from taking vegetable food, we can materially lessen the quantity of sugar in the urine. If I stop a quantity of sugar from going in, it is certain that I lessen the quantity of sugar coming out. But it must be remembered, that the starch which enters the body is converted into sugar; and thus, if starch is prevented from going into the body, the quantity of sugar in the urine will be still more materially lessened; so much so, that M. Thenard stated that animal diet was as decided a remedy for diabetes as quinine was for ague. There is no doubt that quinine cures intermittent fever; but no abstinence from starch and sugar will cure diabetes. Moreover, no absolute abstinence from starch and sugar will stop all the sugar from appearing in the urine. And why is this? I have already said, that the liver forms sugar in a state of health, even when no starch or vegetable substance is taken as food, so that by the strictest diet we cannot altogether stop its appearance in the urine. We can lessen it, but not entirely stop it, so long as the action of the liver continues. The liver, when no vegetable food is taken, continues its action, changing some principles of the food into sugar, which afterwards can be found in the urine. Moreover, in the muscles there are minute traces of sugar; so that if a patient is kept upon animal food alone, some small portion of sugar is taken even when animal food only is eaten. We are led, then, to the following statement of the nature of diabetes. The disease consists in an arrest of those changes in the sugar which should take place in the body in a healthy state. In health the sugar undergoes changes into other substances; it does not remain as sugar in the circulating blood, and therefore no sugar ever passes off in healthy urine. I say that, in this disease, the sugar, from whatever source it comes into the blood, does not undergo its proper changes; it goes into the blood, remains there as sugar, and is thrown out as such in the urine. Now what are the changes that occur in a state of health? The starch going in is changed into sugar; the sugar is changed into organic acid, as lactic acid, and ultimately it is converted into carbonic acid and water, passing out by the lungs. But not only is lactic acid produced; many other acids, as acetic acid, butyric acid, formic acid, and even valerianic acid, may all arise from the changes which the sugar undergoes. We do not know why the sugar undergoes these changes in health. The changes are not yet fully known, much less the causes of the changes. It is in the highest degree probable that the alkaline state of the blood promotes the changes, just as the alkali in the test for sugar with sulphate of copper caused the oxidation of the sugar which took place. I say there is little doubt that the alkali in the blood has, in health, a decided action in causing these starchy and saccharine substances to be thus changed. See, then, the relation of

these changes to diabetes. In diabetes we have the starch going in, and being changed into sugar, and into nothing further.

Changes in Non-nitrogenous Organic Substances.

In Health.	In Excessive Acidity.	In Diabetes.
Starch,	Starch,	Starch,
Sugar,	Sugar,	Sugar.
Lactic acid,	Acid.	—
Carbonic acid.	—	—

This diagram shows the changes which take place in non-nitrogenous organic substances in a state of health: the starch undergoes a change into sugar, lactic acid, and carbonic acid. But there is another state, viz. that of excessive acidity,—in which the changes do not go so far as they do in health; the changes are starch, sugar, and organic acid, not going so far as carbonic acid, but producing only lactic acid, acetic acid, formic acid, and perhaps oxalic acid, &c. I have already spoken of urine possessing an intensely acid character. I have here urine which was passed some months since, but which has never yet gone on to putrefaction, but remains as intensely acid as it was the first day it was passed. This intense acidity appears to be the intermediate state between a state of health and a state of diabetes. I have watched these cases of excessive acidity, to try and find whether occasionally I could not discover sugar to be present; but as yet I have not been successful, though there is no doubt that a state of extreme acidity not unfrequently goes before the diabetic state. But I cannot find that diabetes very often alternates with a state of excessive acidity. As yet I have not met with many well-marked cases of this alternation. However, in the treatment of cases of excessive acidity, I find the same difficulty as in cases of diabetes,—a difficulty in causing the sugar or the acid to change into carbonic acid and water. I want some means of making the sugar and acid undergo these changes. In two or three cases of excessive acidity, I have given alkalies, and kept the urine alkaline for weeks; but, as soon as the treatment was left off, in two days the urine had deposited uric acid in considerable quantity. Even when a patient has been kept on this treatment for months, I have had a considerable quantity of uric acid thrown down two days after the treatment had ceased. Occasionally excessive acidity seems to me to be nearly as difficult to cure perfectly as diabetes; and that there is the closest relation between the two states, I hope to make more evident at some future time, but I have not obtained the full proof of their relation now. Nor can I now explain the reason why, in diabetes, the changes of the sugar do not take place as in health. M. Miahle considers that the sole cause of the disease is the absence of sufficient alkali from the blood. Others think that the disease arises from faulty action of the liver. I have already stated, that the liver is undoubtedly the source of one portion of the sugar; but I cannot consider that diabetes is caused by excessive formation of sugar in the liver. The cause of the arrest of

the healthy changes of the non-nitrogenous organic substances has yet to be discovered.

There is no doubt that alkalies have formed the most beneficial part of the treatment of diabetes. Alkalies, in considerable quantity, have as yet proved more beneficial than any other mode of treatment; at the same time, substances should be given which cannot form sugar, and especially fatty substances, which can be used in the process of respiration. The patient may thus even gain in weight, and the disease be materially checked. In slight cases, occurring in very fat patients, especially where the disease has manifestly some relation to gout, alkalies are far more effectual than in the more severe and confirmed cases in which there is great emaciation.

[Dr. B. Jones next proceeds to speak of the discovery by Bernard that sugar exists in the urine of the fœtus, and also that sugar appears in the urine when the origin of the pneumogastric nerve is wounded. The latter experiment the lecturer has repeated without results. The subject is then summed up in the following words:]

Sugar, we have seen, may come into the blood from vegetable and animal food. Each moment in health the liver is forming sugar. Whencesoever the sugar may come in health, it is changed into organic acid, and ultimately into carbonic acid and water. In diabetes, from some unknown cause, the sugar in the blood is not changed; it is thrown out as sugar. We may stop all the starch and sugar from going in as food, and thereby lessen the quantity of sugar thrown out in the urine, but there still remains the sugar which is formed by the liver; this is unchanged, and still passes off in the urine. The nature of the disease will be fully understood when we know why it is that the sugar, which comes from the food and from the liver, does not undergo those changes which it does undergo in the state of health; and when we can find the means which will cause these changes to take place, then the certain cure for diabetes will be found. The discovery by M. Bernard, of diabetic urine in the fœtal state, in my judgment points to the want of oxidation as the cause of this disease; and as gout partly is caused by a want of oxidation of uric acid, the representative of the albuminous principle, or the nitrogenous substance which is passing out of the body, so perhaps diabetes may be taken to result from an arrest of the action of oxygen on the non-nitrogenous constituent of our food.

Art. 18.—*On the Treatment of Diabetes.* By J. Hogg, Esq.

(*Lancet*, Jan. 3, 1852.)

The chief indications of treatment appear to the author to be the prevention of the elaboration of sugar in the stomach, and to restore the defective power of the digestive apparatus. This end he seeks to accomplish by the use of a medicine which will effectually destroy saccharine fermentation, and his choice fell upon the sulphuret of arsenic. To effect the conversion of this medicine into a soluble sulphuret, which would not accumulate in the system and produce

dangerous consequences, he formed it by the combination of the hydro-sulphuret of ammonia with liquor arsenicalis.

One case is related as an example of the beneficial effects of this treatment, but it is not a very satisfactory one. It is true that the diabetic symptoms ceased, but the patient died of phthisis, exemplifying what is a well-known pathological fact, viz., that toward the close of diabetes, especially where pulmonary lesions become prominent, the saccharine impregnation of the urine often disappears.

Another case is alluded to of a more promising character. The mode of administering the medicine is as follows:

℞ Liq. Arsenicalis, ℥ij;
Ammon. Hydro-Sulph., ♏xx;
Tinct. Hyoscyami, ℥ij;
Inf. Buchu., ℥viij;
Dose, ℥ss every four hours.

Art. 19.—*On a Particular Form of Diarrhœa, with Suggestions for its Treatment.* By Dr. Henry Kennedy.

(*Dublin Medical Press*, Dec. 17, 1851.)

[The form of diarrhœa alluded to is essentially a chronic disease, commencing insidiously, and therefore in general many weeks elapse before advice is sought. The character of the discharges are variable, but generally they are small in quantity, fluid, but containing solid matter. They generally, also, are mixed with mucus, either glairy, or of a yellowish colour. The author is doubtful of the nature of the affection; he has seen it in all constitutions, and sometimes in connection with Bright's disease. On the whole he is disposed to regard it as one of the manifestations of the strumous diathesis. Of the seat of the affection he thus remarks:]

Whatever doubt, however, may exist as to its nature, there is little or none as to the site of the affection; and this is a point—for reasons to be stated farther on—of some consequence to attend to. In all the cases I have seen, the affection was confined to the lower portion of the large intestine, and more particularly to the sigmoid flexure of the colon and the upper portion of the rectum. I do not say that it may not occur elsewhere; very possibly it may, but simply that I have not seen it. Here I have found a portion of the bowel, varying from six to twelve inches, affected with a kind of subacute inflammation, evidenced by congestion and vascularity, in patches, of the mucous membrane, which also gave the idea of being œdematous, and here and there abraded, but scarcely amounting to ulceration. The entire thickness of the intestine was greater than natural, while the neighbouring glands were somewhat enlarged. On the whole, the morbid appearances afforded a very marked contrast to the bowel either above or below the affected part; while at the same time the amount of disease struck me as being comparatively trifling.

The very marked chronic nature of this affection has been already spoken of, and the effects on the general health of the patient are of

the same character—that is, weeks and months will pass away and yet he will be found pursuing his usual avocations. If, however the effects be slow, they are not the less sure; and sooner or later the general health suffers. The patient finds himself gradually getting weaker, and not so inclined to follow his business as heretofore. There is also some loss of flesh, and he is observed to be looking paler than natural, and finally he becomes confined to bed; some slight pitting about the ankles shows itself, and aphthæ in some part of the mouth; and so he dies, the affection itself not having varied in any important point from what has been already described. It is possible, however, that symptoms of phthisis may supervene towards the last, and so the patient's life be shortened. Nor is this to be wondered at when we recollect that the general health has been undermined for months previously, and so prepared, as it were, to take on any diseased action to which the constitution of the patient may have been predisposed. As far as I have seen, the affection is not one that will wear itself out, except in one way—by wearing the patient with it.

The prognosis of this affection may be favorable. The great majority of cases do well, provided they only get fair play. But the slow and insidious character of the complaint is such, that it will happen now and then that it is allowed to go too far, and then all the resources of our art will be in vain, and the patient will die of an affection which there was every human probability could, at an earlier period, have been cured. It is scarcely necessary to add, that the earlier the case is seen it is the easier to cure.

The diagnosis is of some importance, for I believe this affection to be of a specific kind, and that hence it ought to be clearly distinguished from the other forms of diarrhœa; for if not, the treatment is but too apt to be wavering and uncertain. Neither is the sight of the disease, already described, to be ever lost sight of. When, then, we meet a case of diarrhœa presenting the symptoms spoken of, and which need not again be gone over, and above all when we find that it has resisted ordinary treatment, continuing in spite of it for weeks and months, we have good grounds for supposing that we have a case of the affection I have been endeavouring to describe to deal with, and we should act accordingly.

[The treatment is described in the following words:]

It may be stated, of the general run of cases, that more advantage arises from attention to the great principles which regulate health than from any particular line of treatment, such as might appear to be suited to an affection of the sort. A close inquiry into each case usually discloses the fact that the various functions of life are going on but languidly; and the experience I have had has taught me that till these are brought into a more efficient state nothing will permanently be of advantage. Hence it is of the most essential consequence that the various secretions be attended to. Small doses of blue pill, administered at twelve hours' interval, will usually be found useful; but of the class of patients commonly affected, many will not bear even small doses. Any opiate preparation combined with the mercury, should, if possible, be avoided. The state of the surface of the body will, of course, receive our special attention. The skin is

very apt to be found harsh and dry, and it is of great consequence that it should be brought and kept in the most active state possible. The clothing should be warm, and it has appeared to me that a flannel swathe round the abdomen was of much service. The diet should be plain, and such as the patient knows to be easily digestible; it should include animal as well as vegetable food, but I have not found that any special diet, as, for instance, a milk diet, is followed by any marked benefit.

Of astringents, speaking generally, I have little to say, though they would appear to be a class of medicines well suited to the affection under consideration. When used at the first, many of them appear to be useful, and the diarrhœa, if not entirely checked, is at least moderated. But this improvement—and the point is one of some moment—is but temporary, and the disease is almost sure to return, and in an aggravated degree. Hence I have found it to be a useful general rule not to order them till the patient be, so to speak, prepared for their use. Then, and then only, can they be given with a prospect of permanent advantage. I may observe of them generally, that, in this particular affection, the purely astringent effect is not at all so marked as in the other forms of diarrhœa. The disease, it will be recollected, is apparently a very mild one, and yet it is by no means uncommon for all the class of astringents to be used with but little, if any, effect. Of those, from the use of which I have seen the most benefit, I would mention the preparations of columbæ; and I think the powder will be found of more use than the other preparations. The angustura is also a medicine worthy of trial; and, in a late number of the 'Lancet,' Mr. Coulson speaks of the tormentilla, used as an injection, being useful.

[Cases, however, occur which resist the above measures; in such the author advises the local application of nitrate of silver to the affected portion of intestine, by means of a speculum ani. The cases described by Dr. Kennedy are, apparently, those in which we have witnessed signal benefit from the Tinct. Ferri Persesqui nitratis, as recommended by Mr. Kerr.]

Art. 20.—*On certain Secondary Forms of Diarrhœa.* By Dr. Sandwith, Hull.

(*London Journal of Medicine*, Jan. 1851.)

Dr. Sandwith considers diarrhœa, in reference to treatment, under two general secondary forms:—1. Cases in which the blood has been poisoned. 2. Cases depending on some local or constitutional irritation.

1. Instances of the first variety are observed in diseases in which the blood has been contaminated by some poison, in which cases the diarrhœa is often salutary. Thus Mr. Lee has noticed it as a frequent symptom in his experiments on the introduction of pus or putrid fluids into the blood. He says:

"The general result of the introduction of putrid fluids into the system, whether directly into the circulation, or by absorption, is to

produce a peculiar affection, characterised by congestion, of the mucous membrane of the intestines. The evacuations that accompany this condition are evidently an effort of nature to relieve the system from vitiated fluids, &c."

The same phenomena are noticed by Dr. Sandwith as occurring in fevers; and in these diseases, being salutary, should not be interfered with unless approaching collapse renders their suspension advisable. In the early stages of remittent and intermittent fevers, he considers it peculiarly dangerous to arrest diarrhœa by astringents, and states that he has seen, under such circumstances, the irritation transferred to the pulmonary or cerebral organs. A safer plan, in his opinion, is to obtain the alterative effects of turpentine, combined with castor oil in small doses.

2. As examples of the second form of diarrhœa, Dr. Sandwith adduces the *diarrhœa of dentition.* Sudden suppression of this discharge is dangerous. The proper treatment is by regulation of the diet, and alteratives, unless the prostration ensuing from it calls for active interference.

In the *serous diarrhœa of the puerperal state*, in the early stage, with great thirst, hot skin, and rapid vibratory pulse, and pain on pressure, astringents or opiates are hurtful. Here general or local bleeding, salines, and diaphoretics, are the appropriate remedies.

In diarrhœa from hepatic congestion, and in that of vicarious suppressed evacuations, the same principles of treatment are adopted. In the latter, in addition, means should be adopted to restore the suppressed secretions, whether uterine or cutaneous.

Art. 21.—*Hydatids of the Liver Evacuated Externally.* By M. Lafforgue.

(*Journal de Méd. et de Chir. Pratiques*, Août. 1851; and *Monthly Journal of Medical Sciences*, Dec. 1851.)

A young female, after running rapidly down a hill, was seized with acute pain in the right hypochondrium. The ordinary signs of diseased liver soon supervened, and, notwithstanding the most varied modes of treatment, continued for five years. Her relations, believing that marriage would improve her condition, permitted her, in opposition to the advice of her physicians, to take a husband. The symptoms continued, though the disease did not appear to make progress. Six months after marriage she became pregnant. The symptoms now underwent exacerbation, but were soon mitigated, and the pregnancy advanced to the full term. The labour was natural, and the patient even nursed her child successfully. Finally, after the lapse of a year, her condition became more alarming, and M. Lafforgue was sent for. She was then in the following state:—extreme emaciation, general blanching, excessive feebleness, impossibility of retaining food, which was rejected by vomiting almost as soon as swallowed, considerable tumefaction of right hypochondrium, descending to the crest of the ilium and transgressing the linea alba, obstructed respiration, orthopnœa. The respiration soon became more and more embarrassed,

threatened with immediate asphyxia, the patient uttered stifled cries, demanded air, and seemed at point of death. M. Lafforgue, detecting deep fluctuation in the tumour which compressed the lungs, made with the bistoury, between the eighth and ninth ribs, an opening, which permitted the escape of a flood of thick serum. But the incision soon becoming obliterated by the presence of a thick granular matter, it became necessary to enlarge it, and immediately a hydatid, as large as a pear, was evacuated. The discharge was then re-established, bringing along with it hydatid sacs, of various sizes, some full, others completely empty, and with obliterated cavities; those which were so large as to stick in the wound were drawn out with forceps. In the space of a few minutes a vase, capable of holding six pounds of fluid, was filled with hydatids, and with a yellowish serosity of so fetid an odour as to annoy all the assistants.

The patient, after this enormous evacuation, fell into a state of extreme feebleness, the discharge was consequently arrested for the moment. Next day, however, uneasiness and dyspnœa were renewed, the bandage was removed, and a considerable additional quantity of hydatids and of fluid was evacuated. For six days the discharge continued spontaneously, and such was its abundance that it was estimated at twelve to fourteen pounds of fluid, containing several hundred hydatids. Gradually the symptoms disappeared, hydatids ceased to issue from the wound, and the fistula had nearly cicatrised, when the supervention of pains and uneasiness seemed to threaten a relapse. It proved, however, to be a second pregnancy, which led (by the pressure of the uterus) to the complete cicatrisation of the wound.

Art. 22.—*Case of Distended Gall-Bladder.* By W. Budd, M.D., Physician to the Bristol Infirmary.

(*Prov. Med. and Surg. Journal*, Feb. 4, 1852.)

[Dr. Budd reports the following case as one interesting both from its rarity and its diagnostic difficulties.]

A man, æt. 35, of spare habit, was admitted into the Bristol Infirmary in a state of imminent danger. He had been ill three weeks with pain and urgent vomiting, and had the appearance of a person dying from internal strangulation. The main symptom was an enormous swelling of the abdomen, occupying its entire upper half. Just above and to the right of the navel, over a space as large as the palm of the hand or more, the swelling was much more prominent than elsewhere. Bulging abruptly out at this point from the surface of the general enlargement, it had just the look of a large abscess, which had reached the stage of "pointing." Over the same place fluctuation could be distinctly felt, and from its marked and superficial character, it was plain that the walls of the sac, whatever the sac might be, were very thin. The extreme tenderness of the part, however, prevented the examination that would have been necessary to trace its exact outline.

The history was that of a surfeit on oysters and beer, followed by pain and urgent vomiting. The bowels were obstructed for three

days, but at length yielded to medicine; the vomiting, however, continued. He had never had jaundice, or suffered from gall-stones, but had been a confirmed drunkard.

Much difficulty was experienced in determining the nature of the abdominal tumour. By some it was considered to be abscess, by others an hydatid cyst, in which inflammation had been recently set up, but both these opinions seemed to the author to be untenable, first, because there had been no previous jaundice; and, secondly, because the ejecta had all the characteristics of bile. The author states that under this doubtful state of diagnosis his treatment was chiefly directed to the mitigation of symptoms. This was followed by some subsidence of the vomiting, but in the evening he threw up a large quantity of green bile, which was followed by immediate relief.

On the following day all pain had ceased; the abdominal tumour had entirely disappeared, and the liver had estreated within its normal limits. Since this time his recovery was uninterrupted. The following comments on the case are given in the words of the author.

"Many important reflections occur to the mind, in dwelling on this remarkable case. In the first place the obscurity was entirely removed by the event; for it is scarcely necessary to observe that after the crisis which occurred on the night of admission, there could be no doubt, notwithstanding the absence of jaundice, and the frequent presence of bile in the *ejecta*, that the abdominal enlargement was caused by retention of bile, through some obstruction in the course of the common gall-duct; and that the sac was, after all, a distended gall-bladder. One of the important points of the case consists, in fact, in showing that the concurrence of the circumstances here specified constitutes no bar to such a conclusion. It may be further added, that a little consideration suffices to show that the anomaly they seem to offer is more apparent than real. For, it is not too much to say, that this anomaly is at once explained by reference to the exactly analogous circumstances which are often observed in the case of retention of the urine. In the one case, as in the other, the gland continues to separate from the blood the elements of secretion, so that the system is kept free from taint. In the one case, as in the other, these elements are cast out into the natural receptacle, which provides, by its gradual distension, for the gradually increasing accumulation. In both, again, the gland, as well as the bladder, yields to the distending power, and makes room, in its own way, for the fluid which the bladder has no longer space to hold. The parallel does not even terminate here, but extends to the mode in which that partial relief is obtained, by which alone, in many cases, rupture is averted; for there can be no reasonable doubt, that the bile which occasionally appeared in the matters vomited, in the case of John Morgan, had escaped from the gall-bladder by the same mechanism as that by which small instalments of urine distil from the over-distended urinary bladder in cases of retention there. The outward discharge of this bile, as proving communication between the biliary passages and the intestinal to be still extant, although obstructed, was, I need scarcely add, a fact of the first importance in regard to treatment. Very probably, too, it alone rendered the continuance of life possible for so long a period under

such circumstances; for, failing the relief thus afforded, it is but too probable that the gall-bladder, tense as it was in spite of such relief, would have given way under the constantly-increasing distension.

"In the absence of direct evidence the nature of the obstruction itself must of course remain a matter of conjecture. Judging from the circumstances amid which it arose, on the one hand, and the persistence of a partial communication on the other, the probabilities are, that it was caused by inflammation and swelling of the lining membrane of the duodenal and of the common gall-duct, propagated upwards from the gut. Microscopic examination of the stools might, perhaps, have thrown some light on this question, but want of time and other circumstances prevented my having recourse to it.

"The great length of time the obstruction lasted tells much against the notion that spasm was much, though it might have been partly, concerned in it. Many of the circumstances of the case, however, among which I may mention the characters of the urine, coupled with what we know of the pathology of this class of affections, renders it not improbable that the irritant action of an excess of acid in the upper part of the *primæ viæ* might have played an important part in the phenomena. The continued deficiency of bile in the stools, after the obstruction had given way, would admit of various interpretations. It might have possibly been owing to an early stage of cirrhosis. brought on by the patient's habits; or the secreting power of the liver as well as of the kidney might have been impaired, by the long-continued pressure to which the secreting element had so long been subjected; or, lastly, some mechanical obstacle might exist to the flow of bile into the intestine."

[The author, in conclusion, comments upon the caution inculcated by this case with reference to surgical interference; for although a case is recorded, ('Medico-Chirurgical Transactions,' vol. xxvii,) in which a distended gall-bladder was tapped without injury, such proceeding cannot be taken as a precedent.]

Art. 23.—*Case of Dilatation of the Common Bile Duct.*

By A. Halliday Douglas, M.D., Edinburgh.

(*Monthly Journal of Medical Sciences.*)

Dilatation of the biliary passages may occur in the form of a diffused true dilatation; or it may be partial and sacculated. Both of these forms arise, to a certain extent, as the effect of mechanical obstruction; but in the following case, as is sometimes seen in other hollow viscera, a local transformation of the coats of the common duct appears to have superinduced a sacculated dilatation of unusual size; and probably, also, to have constituted the original obstruction of the tube.

Catherine Tait, aged 17, a dark-complexioned girl, a domestic servant, was admitted into the Royal Infirmary on the 28th January, 1848. She had a sallow, dingy colour, amounting to imperfect jaundice. She was languid, listless, and spare, though not emaciated. She complained of unceasing pain in the right side of the abdomen, which was full,

with prominence of the false ribs, and acutely tender; and dull percussion existed from the fourth right rib downwards five inches, and forwards to the epigastrium. Temperature was increased; tongue clean; bowels constipated.

History.—She stated that her complaints had originated three years previously, with pain of the right side. The symptoms had recurred again and again, with paroxysmal aggravations, which had become progressively more frequent; and during the preceding three months they had been nearly incessant, and jaundice had become more decided. The catamenia had appeared irregularly for about a year.

Progress.—The first paroxysm observed in the hospital occurred immediately after admission. It was preceded by a rigor; and the pain and tenderness of the right side of the belly became intense. The tumour increased, with febrile action; pulse was 100; tongue streaked, dry, and brown; constipation obstinate. The paroxysm lasted three days; her agony was intense during the last ten hours, and decreased rapidly, with profuse perspiration, succeeded by extreme languor and prostration, increased jaundice, dark-coloured alvine discharges, and diminished fulness of the right side.

Subsequent to this the paroxysms recurred, with intervals more or less distinct, and little variation in the symptoms, till the month of March, when, after repeated blistering, and the use of emollient enemata, the paroxysms became less frequent, with an interval so long as fourteen days; and the bowels acted regularly, permitting the enemata to be intermitted. On the 6th of March an unusually intense paroxysm occurred, with constipation and vomiting of the ingesta. At the same time the tumour and tenderness shifted more into the lateral region. Emaciation now became decided; the paroxysms were not always so severe, nor so well marked, but they observed little intermission. Œdema of the face and feet occurred about the same date, but did not subsequently increase; and she sweated in sleep. The bowels acted freely, and the motions were usually pale, but after a paroxysm they were dark coloured.

Early in the month of June, the tumour having become perceptibly more diffused, and projecting in the lateral region, with fluctuation, tenderness, and dulness of percussion, nearly as low as the ilium, a trocar was inserted midway between the costal margin and the spine of the ilium. Thirty ounces of fluid escaped, with immediate decrease of the tumour, and relief to her distress, which for many weeks had been almost uninterrupted, and she subsequently had less of the acute suffering. No paroxysm occurred for fourteen days after the tapping. She still, however, lost ground daily, and died somewhat suddenly on the 4th July.

Treatment.—Leeching afforded no relief to the pain and tenderness of the tumour; but she experienced much benefit from hot fomentations; and at a later date repeated blistering appeared to diminish the frequency of the paroxysms. The obstinate state of the bowels, in the first instance, rendered active mercurial and other purgatives necessary; after a time emollient enemata were found to act sufficiently, and with more comfort to the patient.

Post-mortem Examination thirty hours after death.—Surface was of

a dingy yellow colour; volume of flesh small; feet and ankles slightly œdematous.

On opening the abdomen, a large fluctuating sac was found occupying the whole right side of the cavity. Its external surface had the usual aspect of the peritoneal covering; and the duodenum, in the form of a flat band, was stretched across its anterior surface from above downwards; the stomach was displaced upwards, and to the left. The tumour was closely connected to the inferior surface of the liver, along with which it was removed from the body.

The sac was laid open, and was found to contain within a few ounces of half a gallon of yellow fluid, having the consistence of thin syrup, and an offensive fœtid odour. The walls of the sac were dense and fibrous, varying from a twelfth to a sixth of an inch in thickness. The internal surface presented, in the greater part of its extent, the aspect of a reddish-green fibro-cellular texture; and, *in patches*, which were largest at the upper and lower ends of the sac, the surface had a pale, opaque, *pearly lustre*, owing to a dense fibrous layer, which was easily separable, and which was continuous with the superficial areolar layer of the contiguous greenish fibro-cellular part of the surface; and these cartilaginous-like patches had abrupt, elevated, and crescentic margins. In the upper, or hepatic, extremity of the sac were the orifices of the hepatic and cystic ducts, dilated so as to admit the finger, and separated by a crescentic fold of the lining of the sac. The hepatic duct was dilated as far as its second and third divisions; the cystic duct was unaffected in its cystic half; and the gall-bladder was undilated. After careful and difficult search in the lower end of the sac, a follicular-like orifice was found communicating with the continuation of the common bile-duct. This part of the duct was neither dilated nor thickened. The orifice, and communication between the sac and this portion of the common duct, was imperfect, and of a peculiar form; the aperture in the sac was smaller than the calibre of the duct, and was fitted into the duct by a funnel-like process, which appeared to have more or less of a valvular property.

The liver and sac together weighed three pounds. The head of the pancreas was flattened, and spread over the posterior surface of the tumour. The spleen was small. The kidneys appeared normal. The mesenteric glands were universally enlarged; some of them contained a carbonaceous deposit. The cellular tissue was everywhere infiltrated with serum.

The serous cavities of the chest contained a straw-coloured serum, the quantity of which was considerable only in the left pleura. Both pleural surfaces were coated by a dense pseudo-membranous layer of lymph, which was, for the most part, not very adherent. In the right pleura the exudation was more adherent, slightly granulated, and, on the diaphragmatic portion, there was a tubercular-like epigenesis, which was dense, white, and adherent, and, as it were, springing from the substance of the diaphragm, enveloped superficially by the dense transparent fibrous exudation. The right lung was compressed, and in its lower lobe, carnified. The chemical constitution of the fluid contained in the sac was determined by Dr. T. Anderson to be as follows:—"There were distinct crystals of cholesterine in abundance,

obtained by treating the evaporated fluid by ether; and the residue, treated with alcohol, yielded a substance presenting the general characters of biliary matter; a considerable quantity of biliary mucus remained undissolved by the alcohol. The dry residue of the evaporation, when burnt, gave an ash containing much soda." This case, so far as the author has been able to learn, is quite unique; and it acquires additional importance from the length of time it was under observation. The only recorded case he knows at all similar is one recorded by Dr. Todd, in the first volume of the 'Dublin Hospital Reports;' but his case is defective, as it proved fatal almost immediately after being seen by him. Dr. Todd's case presented a *complete* obstruction; and the dilatation appears to have been *uniformly* diffused to the common and hepatic ducts, which are not reported to have undergone any *transformation* of the tissue of their coats. In these respects the case contrasts with the one under notice; and it illustrates well the simple physical effects of the obstruction. The undilated state of the cystic duct and gall-bladder in both cases is worthy of notice, as both presented the peculiar twisted or convoluted state of the cystic duct, to which Dr. Todd, with apparent reason, attributes a valvular office fitted to protect the cystic duct and bladder against the effects of obstruction. The undilated state of these portions of the biliary passages has been ascribed to the acuteness of the angle at which the cystic joins the common duct; but the state of the cystic duct in Dr. Todd's case, as well as the author's own, casts doubt upon this idea, as in both dilatation existed of about half an inch of the choledic extremity of the cystic duct.

The author continues:—"A question of great anatomical interest, arising out of the transformed state of the common duct in this patient, was suggested in the preliminary remark. It is perhaps not necessary to enter into the argument; but if the hepatic portion be, as it certainly is, more prone to suffer dilatation from an obstruction acting equally on the common duct, then the extreme dilatation of the *common* duct must be attributed to the *altered state* of its walls.

"The precise nature of the transformation does not admit of demonstration from the facts observed and described in the report. The minute structure of the lesion was not very distinctive of anything more than mere fibrous, areolar, and epithelial formations; but analogy suggests, in connection with the state of the right pleura and mesenteric glands, that probably the lesion was tubercular.

"The general diagnosis of the hepatic relation of the disease was apparent from the jaundice, constipation, and tympanitis; but the precise seat of the lesion was more difficult to determine. The intense paroxysms, with febrile action and local pain and tenderness, were difficult to explain. Similar attacks have been noticed in analogous cases; and Dr. Todd's patient probably suffered from them along with the "sudden acute tenderness" which he reports. It is well to note these attacks in the absence of marked effects of inflammatory action: and the sudden abatement of the paroxysms might possibly be connected with the incompleteness of the biliary obstruction permitting the flow of the accumulated bile when distension had attained its maximum. The remedies which appeared most to palliate her distress were the

hot fomentations and purgatives. Blisters also were of some service. In a similar case, if the diagnosis could be formed with any certainty, the author would incline to the earlier puncture of the tumour, though it must be admitted, that even this remedy could afford only temporary benefit; but, considering the apparent safety with which a trocar may be introduced, it should be used early and frequently. The trocar employed was the ordinary hydrocele trocar—a smaller one would probably not permit in any case the escape of the fluid, which must always contain more or less mucus."

Art. 24.—*On the Differential Diagnosis of Inflammation of the Pancreas.* By Dr. Frank Lussanna.

(*Bulletino delle Scienze Mediche,* and *Dublin Quarterly Journal,* Feb. 1852.)

In a very careful history of a case of this disease, occurring in a countryman, a patient in the hospital, of spare habit of body and bilious temperament, an extraordinary flow of an excretion resembling saliva was observed, similar to what takes place in individuals under the influence of mercury. This secretion was viscid, puriform, and presented bloody streaks of a brick-red colour, and yet the most careful examination of the cavity of the mouth failed to show any abnormal condition of the parts contained in it; nor was any alteration to be discovered externally in the form, size, or consistence of the salivary glands. The sense of taste was not interfered with, the temperature of the body was generally and remarkably lowered, the pulse was small, slow, and laboured; the expression of countenance indicative of abdominal distress; the patient had frequent inodorous, insipid eructations, which he encouraged in order to relieve a pain and sensation of weight in the epigastric and hypochondriac regions; this pain was not increased by pressure; the bowels were confined, a sense of oppression, tightness, and suffocation were complained of for some hours after taking food,—during digestion. The author, bearing in mind the experiments of Bernard on the uses of the pancreatic juice in digestion, examined the alvine evacuations, and discovered in them several whitish-yellow particles resembling fat or congealed oil; these particles were always found floating, they left a greasy stain on paper, and evidently corresponded to the butter or the fat of broth and meat which had been swallowed; this continued for about three weeks, the fatty particles being more abundant after the use of purgatives; the other alimentary substances swallowed were also recognisable. The treatment consisted in bloodletting, active purgatives, and the administration of tartar emetic. After this period the pain gave place to a feeling of tension, as if a bandage were tightly pressing the abdominal parietes, between the xiphoid cartilage and the umbilicus, towards the back, and in this region a deep-seated nodulated tumefaction was perceptible to the touch. Leeches, frictions with iodine, extract of hemlock, soap, and bitter deobstruent decoctions, were now employed, followed after a time by mercurial inunctions and salt-water baths. The disease lasted three months; after this the fatty matters were no longer to be found in the fæces, the sensation of

weight, producing laboured breathing and a feeling of suffocation, had disappeared; the deep-seated supra-umbilical tumefaction had decreased, the appetite was restored, but the viscid and dense ptyalism (the excretion being, however, less tinged with blood,) the coolness of the skin, the depression of the circulation, the emaciation and the wasted appearance of the face, continued for a time, but in their turn gradually vanished. This case, then, as well as two others seen by Bernard, would go to prove that the most prominent and characteristic symptom of pancreatitis is the fatty or oleaginous nature of the evacuations. Dr. Lussanna endeavours to show that the observation by Dr. Verga of the fatty degeneration of a pancreas, with a simultaneous tendency to a similar degeneration in the other abdominal viscera, is not inconsistent with these facts. He points out that probably the mode of living, age, climate, particular kind of food, &c., may remedy the evils arising from a suspended or deranged state of the pancreatic functions, as we know occurs with other functions, and supports his views by referring to the results obtained from comparative physiology and animal chemistry, and by putting forward the law established by Liebig, that starch, sugar, and all the various principles of ternary composition habitually entering in great proportion into the food of exclusively herbivorous animals, may be transmuted into fatty matters by losing, under the vital influence, a part of their oxygen.

Art. 25.—*New Remedy for Tænia.*

This is a plant called *Muscuna*, a native of Abyssinia, where the parasite is indigenous. M. Prunerby professes to have used it with success in a great number of cases, and considers it superior to kousso, as it destroys the worm without inducing diarrhœa. It is given in powder, the dose being an ounce taken fasting.

Neue Med.-Chir. Zeitung, and *Provincial Journal*, March 13, 1852.

SECT. V.—DISEASES OF THE GENITO-URINARY SYSTEM.

Art. 26.—*On the Varieties of Alkaline Urine.*—By Dr. B. Jones.

(*Medical Times*, and *Prov. Med. and Surg. Journal*, Feb. 18, 1852.)

It is of some importance to diagnose the exact origin of alkalinity in the urine, inasmuch as the prognosis and treatment widely differs. This is clearly set forth in some lectures by Dr. Bence Jones in the 'Medical Times.'

The differences between ammoniacal and alkaline urine are mentioned in the following table:

Contrast between—

Ammoniacal Urine	and	*Alkaline Urine.*
Alkalescence from carbonate of ammonia.		Alkalescence from fixed alkali.
Caused by local disease.		Caused by general disorder.
Blue paper made red on drying.		Blue paper remains blue on drying.
Alkalescence is constant.		Alkalescence is occasional.
Excess of mucus and pus present.		No pus. Rarely much mucus.
Prismatic crystals generally seen.		At first granular deposit only seen.
The iridescent film has prismatic crystals.		The iridescent film consists of thin plates.

The alkalescence of ammoniacal urine, (Dr. Jones continues,) is caused by carbonate of ammonia. It arises from local disease,—from some altered mucus setting up a change in the urea, and giving rise to carbonate of ammonia. *When tested by blue paper it is made red on drying.* The alkalescence is generally found to be constantly present for days or weeks together. The local disease consists in inflammation of the mucous membrane of the bladder, which gives rise to an excess of mucus, and frequently to pus. In the sediment prismatic crystals are constantly seen. If the urine is left to stand, an iridescent scum forms on the surface, giving all the prismatic colours, and in the film distinct prismatic crystals can be found.

The difference when the urine is alkaline from fixed alkali is great. It is caused by general disorder, as indigestion, which is not a derangement of the stomach alone, but a disorder of the whole system. *When tested with blue paper, it remains blue when the paper is dried.* The alkalescence is only occasional, lasting usually a few hours. No pus can be found, and there is rarely much mucus present. There are sometimes oxalate of lime crystals present, but these are very variable. In many points such urine differs thus from ammoniacal urine; the most striking difference is the absence of pus, and of an excess of mucus. But there are other points of difference still to be mentioned. In urine alkaline from fixed alkali, the precipitate which forms at first consists only of a granular deposit of phosphate of lime. Usually there is no appearance of prismatic crystals at all until the urine has stood for some time. The iridescent film, if examined with a microscope, will not be found to consist of prismatic crystals, but of fine thin plates of phosphate of lime, which are perfectly soluble in any acid, and have no crystalline appearance. If these facts are true, then what has been called the phosphatic diathesis, should be called alkaline urine; and this must be subdivided into two very different states, the one ammoniacal urine, and the other urine alkaline from fixed alkali. As the causes which produce these states are totally different, the practical importance of the distinction cannot be overlooked.

[The presence of prismatic crystals in the iridescent pellicle is not strictly characteristic of ammoniacal urine, we have repeatedly met with them so large as to be visible to the naked eye, in the pellicle which forms in the urine of patient's labouring under irritative dyspepsia.—Ed. P. J.]

Art. 27.—*Treatment of Incontinence of Urine, by Cauterisation of the Neck of the Bladder.*

M. Demeaux narrates several cases in which this annoying malady was speedily cured by cauterising the neck of the bladder with Lallemand's caustic bougie. The cases include both sexes.

The involuntary emission of urine is frequently seen in infancy, but seldom occurs after eight or ten years of age, and when it does so the tendency generally disappears at puberty. Numerous measures have been recommended, such as Cantharides, Tinct. Ferri Sesquichloridi, Strychnine, &c., but as all these fail, M. Demeaux's proposal is worthy of trial.

Revue Méd. Chir., Sept. 1851.

Art. 28.—*On Acute and Chronic Desquamative Nephritis.* By George Johnson, m.d., London.

(*Medical Times*, and *Gazette*, April 3, 1852.)

[The following extract is a portion of a course of lectures delivered by the author before the Royal College of Physicians. The first lecture is occupied with a minute description of the healthy anatomy of the kidney, and of its physiological uses. The second, of which we give the substance, is as follows:]

In the early stages of the disease the urine is usually scanty, high-coloured, and more or less deeply tinged with blood. It is highly albuminous, becoming almost solid on the application of heat or nitric acid. The specific gravity varies, being quite as frequently above as below the normal standard. The urine deposits a copious dark-brown sediment, which, on a microscopical examination, is found to contain numerous casts of the uriniferous tubes, composed of fibrin, in which are entangled entire cells of renal epithelium and blood-corpuscles; numerous cells of the same kind, also blood-corpuscles and irregular masses of coagulated fibrin, are scattered over the field of the microscope. It sometimes happens that the patient dies at this early period of the disease, the immediate cause of death being an attack of convulsions, followed perhaps by coma; or it may be that one or more of the serous membranes or the lungs have become inflamed, the blood being poisoned with the urine which the kidneys have failed to excrete.

When in such circumstances an opportunity offers for examining the kidneys, they are found to be slightly increased in size, and more considerably in weight; the latter, in consequence of the increased density resulting from the accumulation of morbid products.

The cortical substance presents the mingled appearances of anæmia and vascular engorgement; small hæmorrhagic spots are frequently scattered over the surface. The medullary cones are usually congested, and have the dark hue of venous blood; not unfrequently the mucous membrane of the pelvis presents some appearances of increased vascular engorgement.

On a microscopical examination, most of the convoluted tubes are found to be opaque from containing excessive numbers of epithelial cells, which, by a process of desquamation, have been thrown off into the cavity of the tube. Others of the tubes are filled with blood, and occasionally the Malpighian capsules at the extremities of these tubes may be seen to contain blood which has evidently escaped from the ruptured Malpighian capillaries. The tubes filled with blood constitute the hæmorrhagic spots before mentioned, which were supposed to be enlarged Malpighian bodies until Mr. Bowman demonstrated their true nature.

The Malpighian capillaries in this and in every form of acute renal disease, attended by an effusion of serum from these vessels, are somewhat opaque, so that the blood-corpuscles within them appear colourless, the surface of the vessels is sometimes roughened, and their outline is rendered indistinct apparently by the effusion of coagulable materials in their interspaces. It rarely, if ever, happens that there is any appearance of an organised effusion in the Malpighian bodies. Neither the arteries nor the inter-tubular capillaries present any change of structure.

[The pathological explanation of this condition of the kidney given by the author is that, while desquamation of epithelium does not occur in health, it does so if the blood becomes charged with any morbid matter, the elimination of which is required. At this time, he does not explain the appearance of blood and albumen in the urine, but proceeds to the progress of these cases, on which he remarks :]

The greater number of patients suffering from this disease who come early under treatment so completely recover that no trace of the malady remains. One of the earliest indications of improvement, is an increase in the quantity of the urine, so that a patient who, perhaps, for some days has secreted only a few ounces of urine in the twenty-four hours will begin to pass it much more abundantly, of a lighter colour, of less specific gravity, and less albuminous. It is by no means unusual for an adult, during the convalescence from an attack of acute nephritis, to pass from four to six pints of urine in twenty-four hours, and this increased flow will continue for several days, the urine being at the same time of an unusually pale colour, and its specific gravity as low as from 1010 to 1012. It is probable that the flux results from the natural diuretic influence of the renal excrement, which during the acute stage of the disease has been retained in the blood, and now, when the tubes are beginning to be cleared of their accumulated contents, and the freedom of the circulation is restored, the suppressed excrements are freely eliminated by the abundant diuresis which they excite. It is well to remember that no artificial diuretic is so efficient as the solid constituents of the urine. Dr. Todd injected urea into the veins of a dog, and the result was, that the animal deluged the floor by the frequency and abundance of his micturition. The same experiment has been performed by others, and with a similar result. The scanty secretion of urine, during the early stages of acute nephritis, is the result of engorgement of the tubes with desquamated epithelium. What now would be the result of giving to a patient at this period of the disease some stimulating diuretic? Some medicine

which would be quickly eliminated by a healthy kidney, together with a certain quantity of water sufficient to dissolve and so to carry off the drug? It is obvious that we shall have added to the quantity of excrement in the blood, without in any degree increasing the secretory powers of the kidney, which are for the time suspended, not in consequence of any imaginary inactivity or torpor, removable by a stimulus, but as a result of a literal choking of the secreting tubes of the gland. If we persevere in the use of our diuretics until the renal disease has subsided, the time will come when, during the natural progress of the cure, the abundant flow of urine commences, and by this means the retained excrement and the superadded drugs will be eliminated. The danger now is, that we may erroneously attribute the cure to the diuretic influence of our drugs, the fact being, that these drugs were mischievous during the early stages of the disease, when the urine was scanty, and superfluous in the latter stages, when the secretion was abundant.

Returning now from this digression to the condition of the urine during the convalescence from acute nephritis, it is observable that after an interval, which varies from a few days to a month, or even more, the quantity of the urine, which has in the meantime been excessive, is gradually reduced to the normal amount; the sediment which at first was abundant, and of a dark reddish-brown colour, diminishes in quantity, assumes a lighter hue, and at length ceases entirely, the natural colour of the urine returns, and the albumen, which had been gradually diminishing, altogether disappears.

So long as the quantity of urine exceeds the normal measure, the gradually decreasing sediment is found to be composed of the *débris* of epithelium and blood, partly scattered and partly in the form of cylinders, which having remained in the tubes until they have become disintegrated, and thence washed away in the current of liquid. There can be little doubt that the increased flow of liquid assists to clear out the tubes, and I have sometimes thought that possibly the epithelial *débris* in the tubes may exert a kind of reflex influence upon the Malpighian bodies, and thus excite them to pour out a stream of water for the actual purpose of flushing the tube, as a grain of dust on the conjunctiva excites a rush of tears from the lachrymal gland.

[Chronic desquamative nephritis is next described:]

The next form of disease of which I have to speak, is one which is characterised by a long-continued shedding of epithelium, which appears in the urine in a more or less disintegrated state,—a phenomenon which suggested the name of "chronic desquamative nephritis," as sufficiently expressing the nature of the disease. The tubes of the kidney gradually lose their epithelial lining, and subsequently become atrophied, or they may be filled with a new and frequently an unorganised material; or, lastly, they may continue to be nourished, secreting serum into their cavities, and sometimes growing into cysts, which at length become visible by the unaided eye. Meanwhile, the renal blood-vessels undergo changes which are of great pathological interest and importance. The kidney in the advanced stages is commonly, but not invariably, much wasted, its substance firm, and its surface irregular. The urine is generally albuminous; its quantity

and specific gravity are variable, but the former usually greater, and the latter less, than in health. The disease is so frequently associated with chronic gout, that Dr. Todd has proposed to call it the "gouty kidney." It not uncommonly, however, occurs unconnected with gout or the gouty diathesis. It sometimes has its origin in an attack of acute nephritis. A labourer is exposed to cold and wet, working, perhaps, for several hours in his wet clothes; he is seized with rigors; the urine becomes suddenly scanty, high-coloured, albuminous, and bloody; and more or less of general dropsy appears about the body. The attack compels him for a time to discontinue his work, and to seek for medical aid; the more urgent symptoms soon subside, but the urine continues to be albuminous. Believing himself to be well, or, it may be, impelled by the necessities of his family, he returns to his employment; and so a disease, which by judicious care might have been entirely removed, becomes a permanent chronic malady, and ends in fatal disorganisation of the kidneys.

When the disease is chronic from the commencement, it often comes on in the most insidious manner, and makes great progress before its presence is suspected.

The essential character of the chronic desquamative disease is a shedding of the secreting cells, which are continually washed away in the urine, sometimes in an entire form, but generally in a more or less disintegrated condition. The urine, after standing, deposits a rather dense whitish precipitate, which is composed of cylinders of disintegrated epithelium which have been moulded in the tubes,—"granular epithelial casts." Some of the same disintegrated material is also irregularly clustered or scattered over the field of the microscope.

In the early stages of the disease, these microscopical signs are present before the urine has become albuminous. Thus they may occasionally be observed for a short time after a paroxysm of gout, while the urine is still free from albumen. When the gouty paroxysm has entirely subsided, the granular casts disappear, returning, perhaps, with the next fit of gout. After a time they are permanently present, but in variable quantities,—always, however, being more abundant during the temporary disturbance of the circulation which accompanies the gouty paroxysms. The destruction of the secreting cells is usually measured by the quantity of their *débris* which appears in the urine; but, in estimating the rate at which the disease is progressing, it is important to remember the fact which I have just now mentioned, that during the gouty paroxysms, or during the temporary disturbance of the circulation which accompanies any local inflammation, the quantity of epithelial *débris* may be much increased.

It is also of importance, with reference to this point of prognosis, to distinguish between that portion of the urinary sediment which is of renal origin, and any addition which may have been made to it by pavement epithelium from the bladder, this desquamation of the vesical epithelium being at once a consequence and evidence of irritation of the bladder, occasioned by the contact of morbid urine.

I have already said, that the granular casts may be observed before the urine has become albuminous. In the early stages of the disease,

the albumen, like the tube-casts, may be temporarily present during the period of a gouty paroxysm, and this may be the case even after the casts have become a permanent sign. At a subsequent period, the albumen, too, becomes persistent, and there is usually a proportion between the quantity of albumen and the number of granular casts, both being simultaneously increased by exposure to cold, or by local inflammations of the joints,—in short, by any influence which throws an additional amount of excretory work upon the kidneys. For the only explanation of this appearance of epithelial *débris* which seems reasonable is one which I have already given of the phenomena of acute desquamation, viz., that the cells are modified by the effort to eliminate morbid matters from the blood, and that they are cast off together with the materials whose union with them has occasioned this modified act of secretion.

And this affords an illustration of one of the general propositions which I just now enunciated,—that "the pathological changes which the renal tissues undergo have an essentially beneficial object and tendency." I shall presently indicate some of the secondary and accidental ill consequences of the chronic desquamative process. Meanwhile, I have to say a few words with reference to the quantity and specific gravity of the urine.

An abundant secretion of urine is one of the most remarkable symptoms of the chronic desquamative disease. It is, of course, important to distinguish between a copious secretion and frequent micturition, the latter, and especially nocturnal micturition, being a frequent attendant upon all the forms of renal disease, even when the actual quantity of urine secreted is scanty. During the progress of the chronic disease which we are now considering, it is not unusual for a patient to pass from fifty to eighty ounces of urine in twenty-four hours. The specific gravity is low, being on an average about 1010 or 1012. The urine has usually a pale and watery appearance; it is generally clear, and, after standing, deposits a dense sediment, which has already been referred to.

The amount of albumen varies considerably at different periods of the disease, being usually most abundant in the middle periods, and least so in the early and latest stages. The comparatively scanty secretion of albumen in the early stages is explained by the slight degree of vascular congestion at that period; and its diminution, again, in the last stage, is a consequence of the diminished vascularity of the kidney.

There yet remain to be mentioned some peculiarities in the microscopical appearances of the urine, which will be more intelligible and interesting if viewed in connection with the condition of kidneys with which they are associated.

In some instances, the urine continues to deposit rather copiously a dense white precipitate, containing the granular casts and scattered particles of disintegrated epithelium before described, until the secretion suddenly becomes scanty, the patient is seized with convulsions, or with some other symptom of suppressed secretion, and in this manner the case terminates. The kidneys are found somewhat diminished in size, from atrophy of the cortical substance; the structure appears

to the naked eye confused, and the lobular markings on the capsular surface are more or less obliterated, but without any decided irregularity of the surface.

On a microscopical examination, some of the tubes are found to be filled with entire and recently cast-off epithelial cells; other tubes have their epithelial contents completely disintegrated; and a large number of the tubes contain no perfect epithelium, the basement membrane being either quite denuded, or having a few granular particles of epithelium scattered over its surface. Many of these denuded tubes are less than the normal size, and are evidently in a state of atrophy, a natural consequence, as it seems, of the destruction of their epithelial lining. It is probable that these denuded tubes have supplied the granular casts which were visible in the urine during life. The opaque granular materials having been washed out, the tubes are left empty and transparent, and when packed in the fibrous meshes of the matrix they have a delusive vesicular appearance. The arrangement of these tubes, and their relations to the other tissues—to the blood-vessels and to the matrix—is precisely similar to that of other undoubted tubes; it is only in their transparency that they differ from the tubes which still retain their epithelial contents; and the transition from the opaque to the transparent tubes may be traced in the gradual washing away of the epithelial *débris*.

There is yet another appearance which is sometimes observed in the tubes. The normal glandular epithelium is replaced by a layer of delicate transparent nucleated cells, which cover the whole surface of the basement membrane. These cells are such as may be supposed to have the power of secreting water, but not the solid constituents of the urine; and it is probable, that the abundant secretion of watery urine is a result of the condition of tubes which I have just now described, the glandular epithelium being removed, and the basement membrane remaining either denuded or covered by a layer of delicate transparent cells.

In this same condition of the tubes, too, we see the origin of the serous cysts which are frequently found in connection with the chronic desquamative disease. The commencing dilatation of the tubes in which the cyst-growth originates is often visible under the microscope. The cause of this dilatation is doubtless some impediment to the escape of the contents of the tubes. It is quite possible that the destruction of the epithelium, and with it the removal of the ciliary propelling force, may lead to the accumulation of the liquid contents of the tubes; but, since it is not certain that cilia exist in the human kidney, this explanation can scarcely be considered adequate to account for the phenomena. A sufficient explanation, however, may be found in the condition of the tubes near the bases of the medullary cones, where they are often completely obstructed by the epithelial particles which have been washed into them from the upper portions of the tubes nearer the Malpighian bodies; and it is in the highest degree probable, that upon this accidental obstruction of some of the tubes their growth into cysts depends. Some of the solid constituents of the urine, either urea or uric acid, have occasionally been found in the fluid of the cysts; but they usually contain only a serous liquid;

water with albumen, and a minute quantity of alkaline salts. The general absence of the urinary salts is sufficiently explained by the fact, that the tubes lose their glandular epithelium before they become dilated, and assume the form of cysts.

Returning now to the appearances in the urine, it is to be observed, that the desquamative process may continue until nearly all the tubes in the kidney have lost their epithelial contents. The urine, then, will be either entirely free from sediment, or will deposit a very scanty one, consisting of the same granular casts as have already been described, with occasionally some of a different kind, having a peculiar whitish, waxy appearance, and a very definite outline. They are either entirely unorganised, or they may contain one or more small bodies, having the appearance of cell nuclei, as if they might be the abortive germs of cells. One peculiarity of these casts is their great diameter, as compared with that of the "granular" and "epithelial casts" before described, and particularly as compared with some casts to which I shall have to refer in a future lecture. While the diameter of the casts last mentioned does not exceed that of the free canal in the uriniferous tubes,—the cavity, that is, in the middle of a tube, which has an epithelial lining,—the diameter of these, which I propose to call "large waxy casts," is equal to that of an entire uriniferous tube, and it is evident that the tubes from which these casts have come can have no epithelial lining. The effusion of this material into the tubes appears to be the result of the last effort of secretion,—an effort which suffices to pour out a coagulable material, but not to organise it into cells. The number of these casts which appear in the last stages of the chronic desquamative disease, is very variable in different cases. Sometimes they are only just sufficient to indicate the stage of the disease and the probable condition of the kidney, a few of these casts, with an equally small number of the granular casts, being deposited from pale albuminous urine of low density and diminishing quantity. These threatenings of suppression are soon followed by a fatal termination, and the kidneys are found wasted, especially in their cortical portion, nearly all the tubes denuded, and many in process of atrophy, while a few contain the remains of epithelial cells, and here and there one is filled with the same kind of waxy material as formed the large casts. The tube is entirely filled by it, and the new deposit is in immediate contact with the basement membrane. The quantity of this material is so small, that to the naked eye the kidney presents no appearance of a new deposit. The shrinking and atrophy of the gland have resulted simply from the destruction of the secreting cells and the consequent arrest of the circulation. There yet remains to be noticed another modification of the appearances in the urine and in the kidneys dependent on the amount of this new waxy deposit.

Art. 29.—*On the Loss of Extractive Matters of the Blood by the Urine.* By G. O. Rees, M.D., F.R.S., &c.

(*Medical Gazette*, July 25, 1851.)

[In our last volume, p. 70, we gave an extract from the valuable Lettsomian lectures by Dr. Rees; which we now continue by an account of a pathological state of the urine, to which he thinks the attention of the profession has not hitherto been directed, viz., the "*passage in the urine of the extractive matters of the blood, unaccompanied by albumen.*" On this topic he observes:]

Keeping in view, then, that the renal surface has been proved subject to an effusion of serum under special conditions, let us now look into the general question of effusion, and the constitution of the various fluids poured out in different parts of the body, and remember how the constituents of the blood are found to divide themselves to form fluid deposits in disease. Taking the chemical history of serous effusions generally, we shall find that in pleuritis and peritonitis of an acute character, a fluid is poured out characterised by the presence not of the entire blood, nor yet of serum, but that the liquor sanguinis is poured out, and that this separates after its effusion into serum and fibrin; the former forming the effused fluid, and the latter depositing in those various forms known as plastic matter, false membrane, &c. Again, serous effusions, especially when of a passive character, are characterised by the absence of fibrin. In fact, serum and not the liquor sanguinis is effused, and this form of effusion varies greatly in its specific gravity. It may contain a larger or a less quantity of albumen. Now, if we look to the more delicately constructed serous membranes, we find conditions which but rarely pertain under inflammations of the pleuræ or the peritoneum. And it is with these more delicate membranes, such as the arachnoid, both in the brain and as it surrounds the spinal cord, that we may more justly make comparison with the secreting surface of the kidney. The effusions into these membranes, though they occasionally contain both fibrin and albumen, —that is to say, though they may deposit plastic matter, and be coagulable by heat, are more commonly constituted of those parts of the blood denominated extractive matters, and which exist in combination with the various alkaline salts of the blood. This is especially the case when the inflammation producing the effusion is of a chronic or subacute character; when the blood merely pours out its water, extractives, and salts. In some cases of arachnitis I have known the fluid effused to consist almost entirely of water, the evaporation of half a pint of it yielding scarcely any residuum. Thus, so far as the chemical history of effusions can assist us, we perceive that the blood may cast off—1st, water alone; 2dly, water, extractives, and salts; 3dly, water, extractives, salts, and albumen; 4thly, water, extractives, salts, albumen, and fibrin.*

In applying what I have now described as the results of analysis

* I would here refer those who may be interested in the question of effusions generally, to a most valuable paper on the subject, written some years ago by my friend Dr. Babington, and published in the 'Medico-Chirurgical Transactions.'

to the consideration of urinary pathology, we at once perceive that as we have the serum of the blood effused by the kidney in certain diseased conditions, analogy suggests the probability that there may be some pathological states in which the extractives and salts only may be effused in the urine with the water of the blood, the albumen not appearing.

The subject having presented itself to my mind as I have now described it, I determined, a few months ago, on making some observations on the patients at Guy's Hospital, with a view, if possible, of determining whether such a drain of the extractive matters of the blood really ever took place,—whether, in fact, the blood were thus sometimes losing its solid constituents in a form we had not yet learned to recognise for want of proper chemical tests of its presence. We possessed ample means of detecting the serum of blood when present in the urine from the reaction afforded by the albumen; but the question now was—How could we detect the extractive matters and salts, which are not only colourless, but very nearly resemble in their chemical reactions the extractive matters naturally existing in the urine? Considering this question, it occurred to me that one of the extractive matters of the blood was precipitable by the tincture of galls; whereas the extractives of the urine possessed this quality in but a slight degree. It became, therefore, a matter of interest to determine in how far this test was capable of making pathological distinctions, and whether the presence of the extractives of the blood in the urine without albumen were significant of any particular disease or of any class of diseases. It struck me that if the analogy between the effusion of serum by inflamed serous membranes and by the secreting surface of the kidney held good, we ought always to find the extractives of the blood effused into the urine with the albumen in albuminuria, as this always happens when albumen is present in ordinary serous effusions. To determine this, my first experiments consisted in testing albuminous urine with the tincture of galls. I began by separating the albumen by brisk boiling and filtration; and having ascertained that the filtered fluid no longer contained any of that principle, I then tested it by the tincture of galls to see if the extractives of blood were present, and had coexisted with the albumen. The test gave, in all these cases of albuminuria, a most abundant precipitate, showing the analogy between the effusion which occurs in the morbus Brightii and that observed in serous membranes. My object being so far attained, I now proceeded to construct a table which should show the reaction of the urine in such cases as I could obtain among the patients in Guy's Hospital. I had a column devoted to the test by boiling, and another to the test of nitric acid, so that I might be able to exclude from the consideration of all cases distinguished by the presence of albumen. A third column showed the reaction of the tincture of galls. As the labour of collecting and weighing the precipitates would have been great, and, moreover, unnecessary in these comparative experiments, I employed three terms to describe the amount of coagulation produced by the test. The first degree was designated "copious;" the second, "considerable;" and the third, "slight." I was assisted in this work by two of my most intelligent

clinical clerks, Messrs. Crawcour and Bown; the cases being principally taken from the clinical wards. The general result shown by the table we used was—

1st. That whenever albumen was present in quantity in the urine, it was always accompanied by the extractives of the blood in large proportion.

2dly. That the cases in which the extractives of the blood were in the urine in large proportion were generally those marked by debility.

3dly. That cases of anasarca, with disease of the heart, and *unconnected with albuminuria*, also showed the extractives of the blood to be excreted by the urine in quantity.

4thly. That cases of chlorotic anæmia and hysteria gave copious precipitates.

5thly. That when in albuminuria the albumen became deficient in the urine, which we know often happens in advanced cases, the blood extractives also decreased in quantity.

6thly. That in cases of anæmia the proportion of blood extractives observed in the urine diminished as cure was proceeding under the use of ferruginous tonics.

The limited number of cases which have as yet been observed, and the extended nature of the inquiry, make it right that we should be careful in drawing conclusions. I think, however, we may safely state that we have already proved beyond a doubt that in certain diseased conditions an important drain upon the blood is going on, of which we have been totally ignorant up to the present time.

That urines vary in their reaction with regard to any test, would be in itself enough to show the importance of analysing the fact; but when we remember that tincture of galls is the precipitant of one of the extractives of the serum of blood, and that albuminous urine containing the serum of the blood gives the most copious result when tested by galls, we must at once admit that the blood is becoming disintegrated when the urine is precipitable by the tincture, and feel the propriety of watching this source of waste in those forms of disease in which it may hereafter be proved to exist. From what I already know, I think we may confidently hope, at no very distant period, to connect this effusion of the blood-extractives into the urine with a peculiar state of kidney—a condition producible, probably, by more than one pathological action, but one which it is highly necessary to counteract in all. We may consider that a new symptom has been afforded us by chemistry: it remains for us, however, to ascertain its precise value, by determining the correct interpretation to be put upon the indication.

When I was speaking of the anæmia which occurred as a sequel to albuminuria, I explained how it was a necessary result of the impoverished state of the liquor sanguinis in which the corpuscles float. We see now, however, that a drain may go on from the liquor sanguinis by its *extractives passing away by the urine,* without any albumen appearing, and that we may thus have another cause for the appearance of anæmia besides that of a drain of albumen; for the extractive matters tend greatly by their presence to keep up the specific gravity of the blood. Reflecting upon this, it occurred to me that, in some of

those cases of anæmia in which we entirely fail to detect any adequate cause for the symptom, we might perhaps find that the blood became impoverished by the extractives passing away in the urine; this deterioration of the liquor sanguinis being followed, as in the case of albuminuria, by the destruction of the corpuscles.

This is a point deserving of attention; but at present I can do no more than direct the attention of practitioners to the investigation of such cases with relation to the condition of the urine. My friend and colleague, Dr. Addison, has shown that the renal capsules become implicated in this form of disease—a fact of some interest in connection with what I have above stated. It may be well to mention that, in a case of diabetes insipidus, I lately found the blood-extractives coming away in very large proportion.

I would not wish it to be supposed that I attach an undue importance to this symptom of urine being precipitable by tincture of galls. The urine of those whose condition approaches to perfect health will often show traces of the presence of the extractives of the blood; and I have reason to believe, that whenever, from hard labour, mental or physical, a certain amount of anæmia follows, the urine will be found impregnated with these extractives. Perfectly healthy urine, however, shows but a slight precipitate on the addition of the tincture.

It is absolutely necessary to remember, in applying this test, that the reaction to be observed is that which immediately follows the addition of the galls; for, if we wait, we almost always get a considerable precipitate; the earthy and potash salts coming down, owing to the precipitating action of the spirit contained in the tincture, and probably other changes occurring.

What we already know, then, of this indication, only goes so far as to show that it is the continuance and excess of the discharge of blood extractives that must make us anxious, and that, like the presence of oxalate of lime crystals in the urine, it may often exist without any material variation from the healthy state. Like oxaluria, however, it is an indication that requires watching; and I believe further research may show it to be still more important than we are entitled to declare it in the present state of our pathological knowledge.

Art. 30.—*Clinical Notes on "Morbus Brightii."* By Prof. Christison, Edinburgh.

(*Monthly Journal of Medical Sciences*, June 1851.)

[Dr. Christison is well known as one of the earliest writers on the formidable malady known as "Bright's Disease." The following remarks, embodying his most recent opinions, will, on this account, possess additional value. In a clinical lecture, from which we quote, he first notices the conditions under which albumen may appear in the urine, he then details the symptoms of the primary disease, and the secondary affections by which it is frequently followed. After this, he proceeds to demonstrate the causes of the disease, the prognosis, morbid anatomy, and treatment. Of the former, he says:]

Causes.—The causes of Bright's disease are obscure. The chief

predisposing cause is intemperance; and it is probable that this agent may gradually induce the chronic form without the aid of any occasional cause. The scrofulous diathesis is another predisposition. I stated this in my treatise on granular degeneration of the kidneys in 1839, as a probable proposition; but there can be no doubt now, that the disease is one of the maladies of the scrofulous diathesis. A strong predisposition is also engendered for a short time by scarlatina. The tendency is sometimes indicated even in the primary fever, by the urine becoming coagulable; in many cases it breaks out with unequivocal symptoms about the close of the third week; but if the patient escape for another week, he is generally safe. Until lately, many physicians doubted the connection, insisted on by myself and a few others, between Bright's disease and the secondary disorders which follow scarlatina; but no accurate or unbiassed observer can well entertain any doubt now. The puerperal state is another predisposition, which has been established mainly by the observations made in this city by my colleague, Dr. Simpson, who meets with few cases of œdema in advanced pregnancy, or of convulsions at that period, or during delivery, without finding that the urine indicates serious renal disease. I have had several opportunities of observing the same facts, both in consultation with my colleague, and likewise with other obstetrical practitioners. There can be no doubt of the connection, and the discovery is of great practical importance, because in pregnancy, as in scarlatina, the occasional examination of the urine may enable the practitioner to foresee and provide for approaching formidable dangers. It has been supposed that other febrile poisons besides scarlatina may have the same effect of engendering Bright's disease, or a liability to it; also that it may originate in the sudden recession of extensive chronic cutaneous diseases. But on these two points, the facts hitherto collected are too few to be trusted. Age, sex, and station, are no farther predisposing causes, than in as far as persons of a certain age, station, or sex may be more exposed than usual to other predisposing, and also to occasional, causes of the disease. I have seen it at the most advanced period of life, as well as at four years, and others have seen it in the new-born; I have seen it often in the most comfortable as in the most miserable, stations of society; and women are quite as prone to it as men. But without doubt it is proportionally more frequent in persons of middle life among the working classes of the community, than in any other circumstances. Of the *Occasional causes*, which have been indicated by various authors, the most unquestionable and most frequent is exposure to unusual cold. It is remarkable how often the acute form of the disease is distinctly referred to some decided exposure to cold; and I do not know a more frequent variety of such exposure than sitting down, while overheated, on the grass or a stone. I think I have observed some cases to arise during mercurial action, without any other apparent occasional cause; and Professer Gluge found it by experiment to be produced by mercurialising dogs. Martin Solon says he has traced it sometimes to blows on the loins; a very probable cause, but one which has never come under my own notice. Gluge has further ascertained, that one pathological form of the disease may be produced in dogs by con-

fining them to a too fatty diet; which has therefore been inferred to be a possible cause in man also. Dr. George Johnson found it to arise in animals kept closely confined in dark apartments, with little opportunity of exercise; which has been supposed to be an analogous connection with what is observed between this disease and the dingy confined habitations of the lowest orders of society. Finally, it is very probable that several of the causes which I have regarded above as merely predisposing agents, more especially intemperance, may develop the more insidious cases of the chronic form, without any other occasional cause; and that both scarlatina and the puerperal state may prove not only the predisposing, but likewise the occasional cause, in exciting the acute form.

Prognosis.—The probable result of an attack of Bright's disease of the kidneys is unfavorable, often extremely so. Some have thought it a desperate malady, always fatal in the end, though often deceitfully persuading the patient and the physician that it has disappeared. At one time I had my fears on this head. But an opportunity of more prolonged observation has convinced me that many cases admit of a radical cure, and many others of being brought to a stand-still for a long period. There can be no doubt that many recover permanently in whom it originates after scarlatina. I think the greater proportion recover of those who are attacked in advanced pregnancy, or about the time of delivery. Complete recovery is rare among the intemperate, or those of strongly strumous habit, and is probably unknown in that pathological form of the disease which will be presently seen to be referable by pathognomonic signs during life of fatty degeneration of the kidneys. The unfavorable primary symptoms are, a scanty, pale, light urine, a very leucophlegmatic or dingy countenance, a chronic progressive emaciation, and above all, a constant drowsy listlessness. A great proneness to secondary affections—especially to severe neuralgia, diarrhœa, chronic vomiting, and frequent dropsy—is also unfavorable; the conjunction of diseased liver or heart is always of evil omen. Dropsy for the first time is not always an unpropitious sign; neither is bronchitis; and acute serous inflammations are no farther unfavorable, than by reason of their own proper risks, and the comparative difficulty of curing them when the kidneys are at the time diseased. It is particularly observable that all intercurrent diseases are more unmanageable and more apt to prove fatal in consequence of the renal disorder. The most mortal of all signs are, a very scanty urine of very low density, an extremely impoverished condition of the blood-corpuscles, and stupor verging gradually towards coma.

Morbid Anatomy and Pathology.—The most important morbid appearances in the kidneys are, in the early stage of acute cases, the signs of bloody congestion, both outwardly and in their intimate structure; in advanced cases of the same nature, enlargement; for the most part a lobulated, botryoidal, or granular, yet sometimes too a uniform surface, with injected reticulations of vessels in the hollows; and internally an invasion of the cortical and medullary structures, and diminution of their usually distinct striated appearance, in consequence of the effusion of a heterologous matter, generally of various

tints of yellowish white, into which the material of an injection passes very imperfectly or not at all. In chronic cases, we may have the same appearances as in advanced acute cases. But often we find the kidneys not enlarged, sometimes even less than usual, occasionally atrophied to an extreme degree. Some have thought the atrophied state may be secondary to a state of enlargement from morbid deposition, this being subsequently absorbed; others conceive that atrophy may commence with the beginning of the disease; nor is it an easy matter to settle that question. In very slow cases the adaptation of the constitution to the gradually degenerating structure of the kidneys may be such, that the patient is not cut off until there remains only a single tubular tuft in the medullary part of one kidney, and two, or perhaps a third, in the other. I have seen one kidney completely atrophied, and without any natural structure visible, and in the other an extensive heterologous deposit, leaving only two medullary tufts visible in a longitudinal section.

These morbid appearances are liable to many variations, which it is very difficult to describe, because it is not easy to define them. I must refer for details to the original description of Dr. Bright, as well as that in my own treatise, and above all to the accurate delineations of Dr. Bright or M. Rayer in his work on 'Diseases of the Kidneys.'

Dr. Bright and his immediate successors were content with ascertaining the anatomical characters of the disease, so far as they could be ascertained with the unaided organs of sense. The result was a suspicion, which was strongly expressed by myself as well as others, that "future pathological research will probably show that there is more than one organic derangement" of structure concerned in producing Bright's disease. The fact is so. But it could scarcely have been proved without the aid of the microscope; which in this, as in other departments of pathology, has lately supplied most valuable information. It would take up too much time, were I to give a detailed statement of the separate results which have been arrived at by the various microscopic observers who have successfully studied the subject. The principal observers have been Gluge, Goodsir, Johnson, Simon, Toynbee, and Gairdner. The most original observations are those of Gluge. The others coincide with him in all very essential points; but there are material differences in the views taken by each of some of the details; nor is this wonderful, considering the fallacies to which the microscopist's eye is subject, when he attempts to pierce deep into the minutiæ of organised structures. There is, however, a satisfactory coincidence of observation on the whole. And upon collating all the microscopic inquiries yet published with one another, and trying them by such opportunities as have occurred to me, I think we may arrive at a consistent doctrine, and one which is tempting alike in a theoretical point of view, and in its practical bearings. I shall now state this doctrine in a series of propositions. It must not be supposed that I insist on these as matters of assured medical faith; but I already regard them as probable; and it is therefore well to have them distinctly enunciated as the basis of future investigation in these wards, as well as elsewhere:

1. The congeries of alterations of the kidneys, described by Dr.

Bright and his more immediate followers in this line of inquiry, depend on at least two distinct morbid processes.

2. One of these is of the nature of inflammation, chronic or acute. The other is a morbid degeneration, always chronic, not inflammatory, analogous to what occurs in various other important organs, and consisting of the morbid accumulation of oil or fat globules.

3. The inflammatory disease in its acute form, although known to originate under various circumstances, and even independently of any pre-existing disease, is best and most frequently exemplified in the phenomena which occur in many instances subsequently to scarlatina, or in the puerperal state.

4. The chronic form of the inflammatory disease always originates obscurely, insidiously, and so gradually that, except in favorable circumstances, it escapes notice for a long time. But it ought always to be looked for by a prudent practitioner in cases of protracted or frequently-recurring dyspepsia, diarrhœa, neuralgia, chronic rheumatism, catarrh, anasarca, and those chronic cutaneous diseases which exhaust the constitution. And it is apt to present itself intercurrently with most other chronic diseases of the greater viscera, especially phthisis, diseased liver, and hypertrophy of the heart.

5. The inflammatory process, according to most observers, consists in a preternatural formation of epithelial cells in the lining mucous membrane of the minute uriniferous tubes of the kidneys, and the detachment or desquamation of these cells; so that, by accumulating in the interior, they obstruct the tubes and choke them up. There are also found in the obstructing matter, blood-discs, pus-globules, uric acid crystals, and sometimes crystals of oxalate of lime. But the greater part of the mass consists of epithelial cells, entire, or much more commonly degenerated, so as to be irregular in their edge, contracted in size, or sometimes reduced actually to their nuclei. According to Gluge, the morbid formation rather consists of the more ordinary secretions of inflammatory action, such as fibrin, pus-globules, and exudation-corpuscles; which not only accumulate in the uriniferous tubes, but are likewise thrown out in greater abundance throughout the surrounding interstitial texture.

6. The consequence is great obstruction to the secretion of the ordinary solids of the urine, and therefore a diminution of these solids, while the watery part may be long secreted as usual, or even in much more than the usual quantity. And the explanation of this interesting double phenomenon, which all must have often witnessed who are conversant with Bright's disease in practice, is that while the epithelial surface of the uriniferous tubes, considered by most physiologists to be the proper secreting tissue of the kidneys,—is grievously injured and diminished, the Malpighian bodies,—supposed by some good authorities to secrete rather the watery part of the urine,—remain for a long time little or not at all affected. The doctrine is a beautiful part of the pathological theory of the disease; but it rests on an insecure foundation, as several microscopic observers maintain they have seen the Malpighian bodies oppressed by congestion within and pressure outside from the distended uriniferous tubes, at an early period of the morbid process.

7. As a result of the secretion of the water of the urine, the obstructed urine-tubes are often swept free of the obstructing material. But it does not always follow that the tubes thus regain their secreting function; for they may have been permanently deprived of their epithelial cells, no longer renewed, or only in diminished number, and in a degenerated form.

8. But an important consequence of this sweeping out of the urine-tubes is, that we find in the sediment of the urine their morbid contents; and these are blood-discs, degenerated epithelial cells, much resembling pus-globules, and still more mucous corpuscles, also nuclei of epithelial cells; and above all, as characterising this particular form or variety of Bright's disease, entire or broken-down casts of the urine tubes, consisting of blood-discs, nuclei, and especially epithelial cells, all united together in cylinders and portions of cylinders by a transparent agglutinating medium, which can scarce be anything else than fibrin. This is one of the most important practical observations yet made in the course of the whole microscopic inquiry. For if exact, it enables us to discover most readily with the microscope the nature of any particular case, and to refer it to inflammatory action as its fundamental source.

9. The other morbid affection of the kidneys, constituting also what is comprehensively called Bright's disease, is a peculiar degeneration, unconnected with any form of inflammatory action, and consisting in deposition of oil-globules in preternatural quantity in the epithelial cells of the urine-tubes, distending these cells, detaching them from the epithelium-wall, distending consequently the tubes by their accumulation, bursting the tubes here and there, and so escaping into the interstitial tissue.

10. The pathological consequences to the structure of the kidneys are here much the same as in the inflammatory form of the disease. The urine-tubes, gorged with oleiferous epithelial cells, become useless themselves in the process of secretion, and by pressure around impede the function both of the unaffected urine-tubes and of the blood-vessels. The secretion of urine is, therefore, much disturbed, in respect of its proper solids, and often too its watery part; but sometimes the watery portion is unaltered, or even superabundant. And whether abundant or scanty, it sweeps out, from time to time, the morbid contents of the tubes, without thereby restoring, however, the healthy organisation of their basement membrane, or the healthy discharge of their function.

11. An important consequence, in a practical point of view, is that in the instance of oily degeneration, as in that of inflammatory deposition, the urine contains characteristic microscopic ingredients in its sediment. Detached oil-globules may be found, though they are difficult to detect, because they do not subside. But degenerated epithelial cells, loaded with oil-globules, and distended often to a considerable size, are more easily found. And there are broken, as well as entire, cylindrical tube-casts consisting of oil-globules, and epithelial cells gorged with oil-globules, and all connected by a transparent and probably fibrinous matrix. In this affection of the kidneys, the tube-casts present few degenerated epithelial cells, in which there

are not many oil-globules. In the inflammatory affection again, oil-globules are either wanting altogether in the degenerate epithelial cells, or at all events they are very scanty and minute. Oil-globules are always easily distinguished from nuclei, blood-discs, and epithelial cells, by their rounded uniform shape, and their broad black margin, produced optically by their strong refracting power.

12. Such are the pathognomonic characters by which the two very different organic alterations of the kidneys may be distinguished during life. But the two affections may concur. After the inflammatory form has subsisted for some time, and many urine tubes have become gorged, or empty and functionless, oil-globules may be secreted into the empty ones, together with a fibrinous matrix, so that oleiferous tube-casts may be afterwards seen in the sediment of the urine, as well as those which are simply inflammatory. Dr. Johnson first noticed this combination; Dr. Gairdner has observed it often; I saw it several times during last spring clinical course; and some have suspected it to be so frequent as to render a diagnosis between the two forms of organic disease for the most part impracticable. I am satisfied, however, that the two affections do occur independently of one another; and in particular I have repeatedly seen sediments presenting invariably the inflammatory character, or at least with only a few oil-globules in the degenerated epithelial cells. The occurrence of a few small oil-globules is no true source of confusion; because, according to the best observers, the healthy epithelial cell is not without a few of them.

13. To the affection which consists of fatty or oily degeneration, Gluge has given the unexceptionable name of *stearosis*, which expresses a fact but no theory. The nomenclature of the other affection is not so easy, and has not been so lucky. It has been called *desquamative inflammation*, because it consists essentially of inflammatory action, causing the epithelial cells to scale off the mucous membrane of the uriniferous tubes. But there is equally scaling of these cells in the oleaginous degeneration. So that if this process is to enter at all into the nomenclature, the one disease should be called *stearotic*, and the other *inflammatory*, desquamation. I do not think, however, that these terms will be long thought quite accurate, or if accurate, altogether convenient.

Treatment.—The treatment of Bright's disease of the kidneys is partly directed to the removal of the fundamental disease, and in part to the cure of secondary diseases.

The main remedies for the fundamental disease are general depletion, topical depletion, local counter-irritation, diaphoretics, diuretics, and astringents. In acute cases general bloodletting is an essential measure, if there be decided general reaction; and in the young, robust, and plethoric, it must be practised freely, as in ordinary acute inflammations. Local depletion is resorted to in subacute cases, or when the constitution is impaired, but, according to my observation, not with the advantage we might expect, unless its amount produces a general impression. Counter-irritation of the loins is probably too little resorted to. It is improbable that any benefit can be derived from depletion or counter-irritation in stearosis, uncomplicated by

inflammatory desquamation. In all cases, acute or chronic, stearotic or inflammatory, diaphoretics are of essential service. The best are Dover's powder, the warm bath, warm clothing, and, for convalescents especially, a moderately warm climate. Diaphoretics have always appeared to me most serviceable when they are so given as to excite a gentle perspiration during a part of the night. Diuretics are seldom necessary for the fundamental disease; but they are sometimes advisable when the urine becomes very scanty, even although there is no dropsy; and they are undoubtedly the most certain and speedy remedy when the dropsical effusions are considerable. I am convinced that the fears entertained by some of injury being produced by the stimulus of diuretics on the kidneys are visionary. In only one instance have I witnessed any apparent harm; and in numberless instances I have seen dropsy quickly removed by diuretics, not only without increase of the other symptoms and secondary affections, but likewise with manifest improvement in them all. The stimulus caused by diuretics may well be supposed to differ entirely from the peculiar irritation which gives rise to either inflammatory or stearotic desquamation; and in that case the induction of the one may not of necessity tend to induce, keep up, or increase the other. Besides, is there no likelihood of advantage from diuretics sweeping out the tube-casts, and other matters obstructing the uriniferous tubes? The best diuretics, in my experience, are digitalis, squill, and bitartrate of potash taken simultaneously. Nitrous ether, broom tops, acetate of potash, oil of juniper, have seldom succeeded in my hands when the three former failed; but after all these had failed, I have seen diuresis speedily established by Hollands. I doubt whether astringents, even in chronic cases, are of the service which we might expect. I have seen a few cases in which the albuminous impregnation ceased under the use of acetate of lead, or under that of gallic acid; but the good effects have not been so frequent as to entitle me to speak positively in their favour.

The treatment of secondary diseases does not materially differ from that which is applied to the same diseases in other circumstances. All of them are more difficult of cure when secondary to Bright's disease. Inflammations must be treated with activity in the usual way. I repeat that, after frequent careful watching I can find no objection to the use of diuretics for removing dropsy, but quite the reverse; but in this affection we should avoid the cathartic plan, as being apt to excite a permanent diarrhœa; and mercury should be shunned as a mercurial on account of the facility with which in this disease it produces excessive action. The best remedy for the diarrhœa, which so often proves troublesome, and sometimes dangerous in Bright's disease, is the Edinburgh lead and opium pill, in the dose of five or ten grains twice or even thrice a day, to which may be added, in severe cases, a fatty suppository of muriate of morphia. Vomiting may be sometimes removed by bismuth, but more frequently by morphia, hydrocyanic acid, creasote, pyroxylic spirit (medicinal naphtha), chloroform, or little fragments of ice; and when these fail, a blister over the epigastrium has sometimes succeeded. It is not necessary for me to say anything of the treatment of other secondary

diseases. In all cases stimulant liquors should be used with caution; but they are sometimes unavoidable when the exhaustion is great. The diet, in the acute form, must be low, light, and farinaceous; but in the chronic form a moderate allowance of nutritive, easily digested food, with a moderate use of liquids, has always appeared to me the preferable diet, when the patient can take it.

ART. 31.—*On the Morbid Conditions of the Kidney which induce Albuminuria.* By Dr. HANDFIELD JONES.

(Reported in *Lancet*, &c. &c.)

The subject of albuminuria has been recently illustrated in a paper read before the Medical Society of London. In his paper, of which the following is an abstract, the author commences by referring to the fact noticed and dwelt upon by Mr. Bowman and others, that in consequence of the peculiar arrangement of the vascular system of the kidney, a more than ordinary pressure is exerted upon the capillaries of the Malpighian tufts, which, at the same time, being unsupported by fibre or solid tissue, are therefore peculiarly liable to rupture and hæmorrhagic effusion. These peculiarities will of course tell with increased effect if the organ becomes actively congested. These well-marked conditions of the kidney are noticed as existing in albuminuria. The first is the condition of engorgement, such as is seen in those who die in the early stages of acute anasarca, or in that of dropsy succeeding scarlatina. The organ is enlarged, dripping with blood in every part, its tissue not destroyed, but many of the tubes are seen under the microscope to contain coagula of exuded fibrine entangling blood-globules, and more or less of epithelium. Under timely and appropriate treatment, the author believes that complete recovery from this affection may take place, and the kidney be restored to its original healthy state. He formed this opinion partly on the result of one examination, partly on the testimony of general experience, with respect to the recoveries which take place in scarlatinal dropsy. The second form of diseased renal structure described, is that of the large, heavy, often mottled, and pale kidney. In this there is no hyperæmia, or rather the reverse state usually exists. The cut surface has not the appearance of healthy structure, and gives one the idea of some matter having been implanted among the natural constituents, so as to obscure them, and to produce a confined aspect. The tubes are found impacted with epithelial matter, but not by any means constantly obstructed or blocked up, although they are irregularly dilated. In some parts, though this is not the case in all instances, oily matter is deposited, and makes the tubes, where it exists, quite opaque. The evidence is, however, as clear as possible, that the morbid process is not of the nature of fatty degeneration. The Malpighian tufts are often obscured by effused matter, and the medullary tubes more or less filled up with oily or granulous matter washed down into them. The author believes that this state of disease may arise, either as a primary degeneration, without any preceding engorgement or hyperæmia, or that it may be the sequel of the first-described condition.

The third variety of morbid change is that so familiar to observation as the dwindled granular kidney. The organ is generally somewhat congested, the cortical secreting tissue remarkably atrophied, the capsule adherent to the surface, which presents the well-known granulations. In advanced cases there is found extreme destruction of the tubes of the cortical substance, their basement membrane is gone, their epithelium scattered about as mere *debris*, and their place occupied in many cases by an abundant cyst formation; the medullary tubes are filled up very often with more or less of granulous and oily matter. The Malpighian tufts are sometimes compressed, sometimes obscured by films of exuded matter, sometimes they seem tolerably healthy. There is no very decided evidence of the formation of new fibrous tissue, as in scirrhus of the liver, but the nutrix often seems to have lost somewhat of its natural homogeneous aspect, and to be infiltrated with a granulous stuff. The author coincides entirely with Mr. Simon's account of the origin of the cysts which are so numerously developed in many cases of granular kidney; he thinks the two following arguments conclusive as to the question whether they are formed solely from an alteration of the tubes, or as a secondary development out of their *debris*—1st, that, as Mr. Simon observed, they have a diameter sometimes less even than that of the tubes themselves; and 2d, that they are not formed in nearly all the instances of kidneys which have apparently undergone precisely similar destructive change of their tubular structure. He believes, however, that cysts are formed by dilatation of the tubes, and perhaps of the Malpighian capsules. The author adopts Dr. Prout's view, that the nature of the morbid change in the two latter forms of renal disease, is not such as can with any propriety be considered as inflammation, sub-acute or chronic; he coincides entirely in the original idea of this celebrated physician, that the disease is truly a degeneration, a spoiling, and impairment of the whole organ, occurring quite independently of inflammation; but on which inflammation or congestion may very easily, and does very commonly, at various times, supervene. This opinion seems to be strongly supported by the acknowledged causes of the disease, which are all of a debilitating nature, exhausting the organic life and vigour of the system. He further contends that the mere exudation of coagulable material into the tubes is insufficient to account for the atrophic change, since it might continue to be washed out by the urine, which does not depend on their being retained in the organ, but on their being no longer formed in consequence of the hyperæmia having subsided. In the treatment of acute anasarca, from whatever cause, cupping on the loin, bleeding if the strength allow, and tartar emetic, are pointed out as the means on which reliance may be placed. The action of the skin is to be promoted, and saline and other diuretics forborne, until the latter stage of the disease, when the author believes they may be employed with benefit. He compares their use, at such times, to that of squills or the balsams in the latter stages of a bronchitis. In the chronic form of disease, constituting "Morbus Brightii," the author remarks, that the degenerative nature of the affection should never be lost sight of, and that our chief endeavour should be, as long as any hope remains, to uphold, strengthen,

and improve the constitution, by every tonic and corroborant means in their power. It is suggested also, whether, in consequence of the ascertained condition of the renal organs, their tubes containing unnatural, dense, accumulated epithelial matter, and when the Malpighian tufts being also overlaid by effused fibrine, it might not be of advantage to administer the alkalies, in the hope of inducing a healthier state of the epithelial lining of the tubes. This seems the more reasonable from the known influence of alkalies on albuminous matters, and their deobstruent powers.

Art. 32.—*Observations on the Physiological Relations of Oxalate of Lime.* By Prof. Lehmann.

(*Brit. and For. Med.-Chir. Rev.*, July 1851.)

Frequently as oxalic acid, combined either with the alkalies or with lime, occurs in the vegetable kingdom, (Schleiden, Carl Schmidt, and others,) it is very seldom found in the animal organism, at least in large quantities. It only occurs in the latter in combination with lime, never being present in sufficient quantity to combine with the alkalies as well as with lime. Moreover it is much more frequently met with in pathological than in physiological conditions.

It is in the urine that the presence of oxalate of lime has been most frequently observed, it was for a long time regarded as a morbid product in this fluid; but independently of the circumstance that this body is constantly present, together with carbonate of lime, in the urine of herbivorous animals, it has frequently been found in normal human urine by the author, Höfle, and others.

In examining microscopically the morning urine of healthy men, Prof. Lehmann has frequently discovered isolated crystals of oxalate of lime; this is not, however, always the case; and further, the oxalate of lime recognisable in such cases by the microscope is not all that is contained in the urine, for it forms in larger quantities after some time, and during the acid urinary fermentation, so admirably described by Scherer. After allowing morning urine to stand for a considerable time, we often find a great many of these crystals, when the perfectly fresh urine presented no trace of them. The following is an excellent mode of demonstrating the existence of oxalate of lime in normal urine. If it be winter, we must expose fresh urine out of doors till it freezes; in this process, as in the freezing of wine and vinegar, a great part of the water crystallises in a comparatively pure state, and after its removal we obtain a concentrated saline solution, in which microscopic crystals of oxalate of lime may be discovered. That oxalate of lime is at first actually held in solution in filtered urine, and that it does not, as C. Schmidt supposes, proceed from the mucus of the bladder, is a view which is supported by the experiment which Prof. Lehmann has often repeated, that in urine, which after thoroughly cooling was freed from its mucus and urate of soda by filtration, the most distinct crystals of oxalate of lime might, after a time, be recognised, while no traces of them could either previously be detected in the mucus of the fresh urine, or found after the residue on the filter

had been for some time in contact with water. The oxalate of lime, with a few crystals of uric acid, does not separate from filtered urine until after it has stood for some time. We may very easily convince ourselves that oxalate of lime is present in a state of solution, by extracting the solid residue of filtered urine with not too concentrated spirit, and agitating the spirituous extract with ether; after the extraction with ether, there may be observed in the alcoholic extract, a sediment insoluble in water, which consists of the most beautiful crystals of this salt. While in the acid urinary fermentation, the separation of the oxalate of lime increases with the augmentation of the free acid of the urine, in the latter case the salt is separated by the removal of the free acid.

The quantity of oxalate of lime in ordinary urine is so minute, that, till recently, chemists, from the want of sufficiently accurate means of analysis, were unable to recognise it; good analysts have, however, always found, in the insoluble part of the ash of the extract of urine, a little carbonate of lime, which, at all events, owes part of its origin to the oxalate of lime.

Crystals of oxalate of lime are most frequently found in the urine after the use of vegetable food, especially of such kinds as contain ready formed oxalates, (Wilson.) Donné found that after the use of sparkling wines, the quantity of the salt is increased in the urine; and Prof. Lehmann's experiments show that there is an increased secretion of oxalate of lime after the use of beer containing much carbonic acid, and of the alkaline bicarbonates and vegetable salts. He cannot confirm Bird's view, that highly nitrogenous food causes a precipitate, or even an augmentation of the oxalate of lime. It is often found in the urine of pregnant women. (Höfle.)

From a series of direct experiments on the subject, C. Schmidt is led to deny that oxalate of lime, introduced into the stomach, passes into the urine; and in this point the author can perfectly confirm him, without, however, going so far as to assert that the food exerts no influence on the formation of this body. In the excrements of caterpillars we often find much oxalate of lime which is not formed directly from the ingesta, since he has very often found the crystals in the biliary ducts of these animals. Preparations can easily be made of these organs; and in consequence of their contractility, a large quantity of their contents may be expressed from the cut tubes, and submitted to microscopic examination.

With reference to the occurrence of oxalate of lime in certain morbid conditions, Prout, Bird, and others, make very different statements, none of which are yet fully established. Numerous examinations of morbid urine have convinced the author, that in this country, at least, the sediments of oxalate of lime are much rarer than they are represented to be by English writers. These investigations have led the author to the following results: when the respiratory process is in any way disturbed, we most frequently observe a copious excretion of oxalate of lime; it is most common either in fully developed pulmonary emphysema, or when the pulmonary tissue has lost much of its elasticity after repeated catarrhs; on the other hand, it is not present nearly so often in inflammatory or tuberculous affections of the lungs (Höfle);

moreover, it is common in convalescence from severe diseases, as, for instance, typhus, mucus-corpuscles being then often associated with a trifling sediment of oxalate of lime. The author has only met with actually pure sediments of this salt in three persons, who sometimes (at somewhat considerable intervals) suffered from epileptic attacks. It is by no means constant, according to his experience, in the urine of rachitic children (Simon), of gouty adults with osteoporosis, of women with leucorrhœa, of patients with heart disease, or in urine containing semen. (Donné.)

In the dyspeptic conditions in which Prout and Bird have found sediments of oxalate of lime, Prof. Lehmann has failed in discovering anything of the sort; on the contrary, he has generally found the sediments in the urine of such patients to be free from these crystals. The reason why the English have so often found this salt in the urine, may be, that in England the urine is generally in a more concentrated state than in Germany; and as Bird very correctly remarks, oxalate of lime is more rapidly separated from a concentrated than an aqueous urine. Moreover, experience at the bedside teaches every unprejudiced observer, that the appearance of oxalate of lime in the urine, is by no means accompanied by the group of symptoms which certain English physicians describe as pertaining to what they call the oxalic diathesis.

That the mulberry calculus consists for the most part of oxalate of lime, has been long known; but most of the urinary calculi, whether they consist principally of earth or urates, almost always contain a little oxalate of lime.

This salt has only rarely been found in other places besides the urine. C. Schmidt has remarked that it is often present in the mucus of the gall-bladder, and that it is scarcely ever absent from the mucous membrane of the impregnated uterus. Prof. Lehmann once discovered oxalate of lime in expectorated matter; but whether it was produced from the pulmonary mucus, or from fragments of food in the mouth, he could not decide.

Origin.—As the use of vegetable food, of which many varieties contain oxalates, increases the quantity of oxalate of lime in the urine, the inference would seem a legitimate one, that the oxalates are transmitted from the food to the urine. The source of this salt must however, not be sought for only in the preformed oxalates, but in the amount of alkalies in combination with vegetable acids present in the food; for, as we have already mentioned, they induce an augmentation of the oxalate of lime. In all the well-marked cases to which the author has alluded, the increase of the oxalate of lime seemed to be combined with disturbance of the respiratory process. Thus it may easily be understood why, after the use of drinks rich in carbonic acid, of alkaline bicarbonates, or vegetable salts, oxalic acid is increased in the urine; the superfluous carbonic acid which has entered the blood, or been generated there from the salts of organic acids, must obstruct the absorption of oxygen and the perfect oxydation of certain substances in the blood; hence, also, the quantity of oxalate of lime has been found to be increased by the partially impeded exchange of oxygen and carbonic acid in the lungs, consequent on emphysema,

pulmonary compression during pregnancy, &c. We might, in such cases, assume, according to a formerly prevalent belief, that the kidneys in some degree acted vicariously for the lungs, since under the form of oxalic acid, they remove from the organism the carbon which the latter organs would have excreted as carbonic acid.

Although certain chemists hold a contrary opinion, it is an undoubted fact that the nervous system has an influence on the oxydation of the blood. The occurrence of oxalate of lime in cases of epileptic convulsions, in convalescent persons, &c., might be referred to the disturbance induced in such cases in the nutrition or in the function of the nervous system, and to its diminished influence on the process of respiration, without there being any necessity for the assumption of a special diathesis.

It seems, moreover, unreasonable to set up such a diathesis, since the establishment of a special disease from a single symptom—that symptom being only the occurrence of oxalate of lime—is entirely opposed to the spirit of rational medicine.

From Wöhler and Liebig's discovery, that uric acid is decomposed by peroxide of lead into urea, allantoin, and oxalic acid, it has been pretty generally assumed, that the oxalic acid of the urine is due to an oxydation of the uric acid; the oxalic acid, in this case, not being converted into carbonic acid, as usually occurs in the healthy organism. That the formation of oxalic acid may be in part thus explained, is unquestionable; but there are many other substances in the animal organism besides uric acid, which by oxydation yield oxalic acid. No definite numerical ratio between the uric acid, urea, and oxalate of lime in the urine, has been yet established.

C. Schmidt has propounded a very ingenious view regarding the origin of oxalate of lime in the urine. He believes that we must seek for the source of its secretion in the mucous membrane of the urinary passages; the oxalate of lime is first produced by the decomposing action of the acid urine on a soluble compound, oxalate of albumen-lime, secreted by the mucous membranes; for oxalate of lime, as an insoluble body, could not penetrate with the urine through a series of renal cells; oxalate of lime is also formed from the mucus of the gall-bladder by this mode of decomposition. When oxalate of lime occurs in the urine, we always find an augmentation of the mucus. These reasons do not, however, appear to be so decisive as to induce us to exchange the view we have already given for that of Schmidt; and, indeed, in another place, we find Schmidt himself maintaining that the urea is in part combined with oxalic acid.

PART II.—SURGERY.

SECT. I.—SYMPTOMATOLOGY AND DIAGNOSIS OF SURGICAL DISEASES.

Art. 33.—*On the Diseases of the Frontal Sinus.* By Dr. O. B. Bellingham.

(*Dublin Medical Press*, Jan. 14, 1852.)

[The commentary on disease of the frontal sinuses which follows, is appended to the detail of a case of dropsy of the cavity, with absorption of the bony parietes. The patient was a man æt. 46. He had a tumour the size of a lemon, occupying the forehead, above the root of the nose and superciliary region, pressing the eye outwards. It was not painful, and the skin was not discoloured; it gave a sense of fluctuation. Dr. Bellingham made a transverse incision over the whole length of the swelling, and evacuated a large quantity of dark viscid fluid. The anterior table of the frontal bone, as well as the posterior, were absorbed, so that the pulsations of the brain were perceptible. The wound was healed on general principles, and the cavity filled up with granulations, the cure being interrupted by an attack of erysipelas.

Dr. Bellingham's comments are to the following effect:]

In the infant at birth there is no trace of the frontal sinuses; between the age of two or three years they begin to make their appearance, when they constitute merely larger cells in the diploe. They are not fully developed until about or after puberty, when they consist of two cavities, often of different size, and varying also in size in different subjects, which sometimes communicate with one another, but always with the nasal cavities by a separate foramen in each, which opens into the middle meatus of the nose.

The development of these sinuses is the result of the receding of the two tables of the bone from one another; or, more properly speaking, of the advance forward of the anterior table, and it is in some measure from the development of these sinuses that the change in the profile of the face, which occurs at this period of life, is brought about.

The frontal sinuses are lined throughout by mucous membrane, which is continuous with the pituitary membrane lining the nasal cavities; but it differs from the latter in being denser in its texture and paler in its colour, as well as in being smoother and more highly polished. In the infant at birth, as there is no trace of these sinuses, so of course this membrane is altogether absent at this period.

The membrane, then, which lines the frontal sinuses, although it is considered to be a continuation of the pituitary membrane of the

nose, would appear to be developed subsequently to it; and it differs from it not only in appearance, but in its liability to disease; for while spontaneous disease of the mucous membrane of the nasal cavities is sufficiently frequent, disease of the membrane which lines the frontal sinuses is excessively rare.

The frontal sinuses, from their position, are exposed to injuries from cutting, puncturing, or other instruments, from blows or falls, &c.; and inflammation, followed by suppuration, may be the result of such injuries, but appears to be rarely so. Some few cases are also upon record, of inflammation ending in abscess in the frontal sinus, independent of injury, in which the matter either made its way into the nose, and so escaped, or was retained, and gave rise to a train of severe and distressing symptoms. A graphic description of a case of this kind will be found in the second volume of the 'Principles of Surgery,' by John Bell.

The works of the older authors contain cases, or allusions to cases, where anomalous or alarming symptoms, amounting in some instances to convulsions or maniacal delirium, were produced by insects finding their way into the frontal sinuses, or by worms developed in these cavities, which symptoms ceased upon the escape of these animals by the nostrils. The majority of such cases are, however, badly authenticated, or the details are too imperfectly given to render them of much value; and as analogous cases have not, so far as the author is aware, been met with by modern surgeons, it may reasonably be doubted whether the symptoms were always due to the cause stated. Indeed the membrane which lines the frontal sinuses does not appear to be endowed with very acute sensibility; in the case before us, at least, this membrane was exposed and handled without any particular sensation being experienced by the patient. Besides, we know that in certain animals, particularly the dog, a species of entozoon, the pentastoma tænioides is developed, and has its natural habitat in the frontal sinuses.

The analogy between the membrane lining the frontal sinuses and that of the cavities of the nose, is shown by the occurrence of polypi in the former cavities. This, however, is excessively rare, so rare, indeed, that the author believes there are only three examples of it upon record, and an interval of one hundred years intervened between the occurrence of the first and second cases; two of them, moreover, were complicated with nasal polypus. The first of these cases occurred at La Charité, in the year 1725; it is detailed by Levret, the inventor of the canula, and is quoted by Boyer, in the sixth volume of his 'Surgery,' as the only example he knew of polypus of the frontal sinus. In this case, polypi existed in the maxillary sinus, in the nose and throat, as well as in the frontal sinus. The second case was published in the 'Journal de Rust,' in the year 1825: the sinus was trephined, and the polypi removed by incision. The remaining case is reported by M. Wuth, in a work on surgery, published in Berlin, in 1844; it has been quoted at some length in the twenty-first volume of Dr. Forbes's 'British and Foreign Medical Review,' and is stated by the writer to be the only case on record where a polypus was extracted from the frontal sinus with success. This patient, who was a boy of ten

years of age, is stated to have laboured under the disease for nine years; but this must be a mistake, as the frontal sinuses are not developed at that early age; during all this time he is said to have suffered from severe pain in the head; the "regions of the frontal and nasal bones were greatly protruded, and the left eye was so entirely pushed forwards out of the orbit, that it lay on a level with the back of the orbit." Dr. Wuth proceeded to operate, by making a vertical incision from the nose upwards, and a horizontal one close above the eyebrow; the flaps were dissected up, and the trephine applied in two places, when "an immense quantity of polypi protruded." They were removed by incision, and the cavity left was capable of containing three hen's eggs. "The healing of the parts occupied twelve months, the frontal sinus being by that time considerably lessened in all directions, and the eye having partially returned into the orbit."

In two instances upon record hydatids were developed in the frontal sinus, and gave rise to symptoms analogous to those produced by polypi in these cavities. One of these cases was treated by Langenbeck; he perforated the sinus with the trepan, and extracted the hydatids with a forceps. Hydatids, the author observes, have also been developed in the substance of the frontal bone away from the sinuses: a remarkable case of the kind, which was treated by Mr. Keate, is contained in the tenth volume of the 'Medico-Chirurgical Transactions.'

The membrane which lines the frontal sinuses is believed to secrete a mucous fluid, which, in the healthy state of the parts, finds its way through the foramina opening into the nose. Now, if from any cause, the escape of this fluid was impeded, or altogether prevented, symptoms depending upon its retention might be expected to set in. In practice, however, this is not observed. The accumulation and thickening of the mucus in these sinuses might (M. Boyer says) produce some of phenomena which result from inflammation and suppuration in it; but "I do not know (he adds) that there exists a single example of it." "It is possible (M. Berard observes) that inflammation might cause an increased secretion of mucus, and that the passage into the nostrils being obstructed, the fluid would accumulate in the sinus, and produce a state of disease similar to that observed in the maxillary sinus; but no fact of this kind has yet been published."

The history of the present case would, however, lead us to suppose that such may have been the origin of the disease here; the patient stated that he was exposed to cold, which affected the left eye, congestion of the mucous membrane lining the sinus probably followed, obstructing and finally obliterating the communication between it and the nostril, the secretion accumulated, and became inspissated, owing to the absorption of its watery particles; as the fluid increased in quantity, the sinus became dilated, its pressure caused the absorption of the bony parietes, and eventually the swelling made its appearance externally.

In the few cases upon record where a foreign body, as a polypus, was developed in the frontal sinus, and by its enlargement caused absorption of the bony parietes of this cavity, pain, persisting constantly night and day, was one of the most prominent symptoms. We might therefore have supposed that such a distension by fluid of the frontal

sinus as was sufficient to cause the absorption of its bony parietes, would have been attended with considerable pain, yet nothing of the kind was observed; the patient suffered only from pain at one point, which was never severe, and all through pain was an unimportant symptom.

Again, where distension of the frontal sinus is caused by pus the result of inflammation of the lining membrane, and where the pressure of the fluid is sufficient to cause absorption of the bony walls of the sinus, the posterior table being the thinnest is supposed to yield first, occasioning compression of the brain to a greater or less extent. Thus Velpeau observes—"When fluids collect, or tumours are developed in the frontal sinuses, their posterior lamella being the thinnest yields first, quickly causing pressure on the brain." Boyer also, in reference to the same point, observes—"Most frequently in place of the anterior it is the posterior wall of the sinus which yields, because it is thinner and less resisting; it becomes thinned, wears, and at last gives way, when the brain, compressed at first by the swelling of the sinus, is immediately so by the pus. In such cases the abscess of the frontal sinus is almost always accompanied by swelling of the upper eyelid on the same side, and by paralysis of the muscles upon the opposite side."

Now, in the case before us, although the amount of fluid contained in the frontal sinus was sufficient by its pressure to cause thinning, and finally complete absorption of its bony parietes, the anterior wall was the one to yield, and the brain did not, at any period, suffer the slightest pressure.

In most treatises on surgery, morbid states of the frontal sinus are either very cursorily alluded to, or all notice of them is omitted. The only diseased conditions of these parts mentioned by Boyer are, wounds, inflammation and suppuration, polypi, and the presence of foreign bodies, including insects and worms. Hydatids have also been observed in two or three instances, as have tumours presenting the characters of vascular nævi. But the author has not been able to find any diseased state described analogous to that presented by this patient; and as the dilatation of the maxillary sinus, caused by the accumulation of its secretion, has been named by Dubois and Boyer "*Dropsy of the Maxillary Sinus*," the morbid state of the frontal sinus, which he has described, would perhaps not inappropriately be termed *Dropsy of the Frontal Sinus*.

ART. 34.—*On Suppuration in Bone; with Cases of Abscess in the Tibia Successfully Trephined.* By HENRY LEE, Esq., Surgeon to the Lock Hospital.

(*London Journal of Medicine*, Jan. 1852.)

Case I.—James Stocker, æt. 26, came under the author's care at King's College Hospital, on the 16th June, 1851. He then complained of intense pain in the left leg, which had prevented him sleeping, except at very short intervals, for a month previously. The pain continued without intermission, but was aggravated by occasional paroxysms. At such times, it would first be felt in the tibia, extend

thence to the knee, and shoot up the thigh to the hip. This shooting pain was of a most excruciating character.

Upon examination, the shaft of the tibia was found enlarged to double its natural size. The enlargement occupied four or five inches of the bone, being most marked in its middle third, but altogether situated nearer the upper than the lower extremity. Pressure upon the swelling caused no uneasiness, nor did the position of the limb in any way appear to affect the character of the pain. No tender point could be detected in any part of the enlargement. When the pain was most severe, he appeared to derive some comfort from walking about; and he would occasionally get up in the night to do so. The pain and want of sleep had evidently given him a careworn appearance: but as far as the different functions were concerned, he appeared to be in perfect health; nor was there any history of his having suffered from constitutional disease.

He stated that, seven years and a half previously, he had, after some slight injury, first experienced pain in the leg. It was then worse at night, but used to leave him at five o'clock in the morning, "as regular as the clock struck." At that time, the pain lasted for nine weeks, and during the whole period was unaccompanied by any tenderness upon pressure. At different intervals afterwards, he experienced some slight return of the pain, but never so as to cause him much inconvenience, till he struck his shin against a chair, about five weeks before he came into the hospital. On the evening before this slight accident, he felt pain in the leg, which he at once recognised as of the same character as that which he had experienced seven years before. In two or three days the pain became so severe that it prevented him sleeping at night. He used different remedies, in the hope of obtaining some relief, but the symptoms continued unabated up to the time of his application at King's College Hospital.

A blister was now placed over the tibia, and was dressed with equal parts of mercurial ointment and extract of hyoscyamus. He was also directed to take four grains of the iodide of potassium in infusion of quassia three times a day. This treatment was continued for a fortnight, when the pain had in a great measure subsided. He now took more to drink than he was accustomed to do, and the pain returned with all its former severity. It was, however, still unaccompanied by fever, or by any tenderness of the part. The same plan of treatment as before was adopted, and he experienced a remission from his sufferings for about a week. At the expiration of this time, without any apparent cause, the pain again returned, and a repetition of the medicine was not followed, as before, by any marked relief. The author now determined to trephine the tibia, and advised the patient to come into the hospital for this purpose, which he did upon the 12th of August.

The operation was performed on the following day. As there was no spot upon the tibia that was particularly tender, a point was selected for the application of the trephine which projected, and which felt slightly hotter to the touch than the rest. A common trephine, with a shoulder, was used, as no other was at hand. The instrument in consequence became buried in the bone, as far as it could conveniently

go, before it reached the medullary canal. This depended upon the great thickness and increased hardness of the parts, and caused a little delay in the operation. After removing the trephine and reapplying it, some matter was observed oozing up by its side. A complete circle of bone, three eighths of an inch in depth, was now removed, and an abscess in the medullary canal presented itself. Mr. Fergusson, who was present, observed the peculiarly white and creamy appearance of the pus. The cavity in which it was contained was about an inch and a half in length, and would have held two or three drachms. There was no portion of dead bone connected with the disease, and the matter was not in any degree putrid. The point at which the trephine was applied was exactly six inches from the head of the tibia.

After the operation, the edges of the wound were slightly brought together and covered with wet lint. The pain ceased as soon as the patient had recovered the immediate effects of the operation, and did not again return. On the 22d of August, the skin had nearly covered the wound, leaving a small opening leading into the cavity of the bone. The tibia itself had by this time considerably diminished in size. This patient was sufficiently well to leave the hospital at the end of a month; and in two months, the bone had nearly regained its natural size.

The following case is from notes taken by Mr. Prescott Hewett, during the time he was house-surgeon at St. George's Hospital.

Case II.—William Mowbray, æt. 24, was sent up from the country on the 17th of November, 1838, for the purpose of having his leg removed. His constitution was at that time evidently suffering from disease, connected with enlargement of the head of the left tibia. This was accompanied by constant pain and want of sleep, and was supposed to be connected with some affection of the knee-joint. Upon examination, the leg in this situation was found to be nearly an inch more in circumference than upon the opposite side. The swelling, which was prominent and tender at one point, extended for three and a half inches down the inner side of the bone. A dark purple blush occupied the skin, covering its most projecting portion a little below the tubercle.

He stated that, six years previously, he first experienced a dull, heavy pain over the shin bone, which was followed by a swelling below the knee. The symptoms continued unabated for two months, during which time he applied leeches and took medicine. He then changed his residence, for the benefit of fresh air, but the symptoms still continued, and had not entirely subsided for four months more. He now considered himself well, and continued without suffering any inconvenience till three months before his admission into St. George's Hospital. The pain, without any apparent cause, at that time returned, and the upper part of the bone again began to enlarge. Leeches were applied, and mercury given internally, but without benefit. After his admission into the hospital, calomel and opium, sarsaparilla and iodide of potassium, were given in succession, but still without any alleviation of the symptoms.

On the 13th of December, Sir B. Brodie applied a trephine to the head of the tibia, and about three drachms of pus were evacuated

from a cavity in the cancellous structure of the bone. This cavity extended upwards to the immediate neighbourhood of the knee-joint. The point selected for the application of the trephine was where the bone was most prominent, and where the greatest tenderness was experienced upon pressure. The operation afforded immediate relief. The man slept well the night following, and from that time improved in health and appearance. In a month, the cavity of the abscess was nearly filled up, and the patient was discharged, cured, on the 30th of January, 1839.

Remarks.—The disease, of which the above cases afford examples, was originally recognised by Sir B. Brodie in the year 1824; and the symptoms, then observed for the first time, have served to distinguish the affection in the cases which have subsequently occurred. The first case recorded was that of a man, twenty-four years of age, who had a considerable enlargement of the lower end of the tibia. The skin covering the swelling was thin, tense, and closely adherent to the periosteum, but the ankle-joint admitted of every motion, and was apparently sound. There was constant pain in the part, generally of a moderate character, but every now and then becoming excruciating, keeping the patient awake at night, and confining him to the house for many successive days. The disease had been going on for twelve years, and instead of getting better, became every year worse. At length it was resolved to amputate the limb. The lower extremity of the tibia was found to be enlarged, and its surface presented marks of great vascularity. Just above the articulating surface, there was a cavity in the centre of the bone as large as a chestnut, and filled with dark coloured pus. This cavity was smooth internally, and the bone surrounding it was much injected and harder than natural.

In every healthy inflammation the process of adhesion precedes that of suppuration, and pus when formed is consequently limited and circumscribed by lymph previously effused; but in unhealthy constitutions, the requisite power may be wanting to carry out the process of adhesion; and should suppuration then take place, the purulent fluid may permeate from cell to cell in the surrounding parts. These two processes are exemplified on the surface of the body by a common abscess and a diffuse cellular inflammation. In the cancellous structure of bone the actions are strictly analogous, though somewhat more tardy in their development. The products of the inflammation may be limited by the effusion of bony matter, which fills up and obliterates the surrounding cancelli; or the secretions of the part (when the adhesive process is imperfectly developed) may infiltrate the structure of the bone to an unlimited extent. We have thus a natural division of the cases of suppuration in bone into those which are circumscribed, and those which are not: into cases of abscess, properly speaking, and into those of purulent infiltration.

These two classes of cases differ in their causes, progress, and termination. The simple abscess usually originates in young and healthy persons: the infiltration of purulent matter rarely takes place without some present depressing influence, or some former cause of constitutional weakness. The simple abscess is marked in its progress by excessive pain, and may continue in much the same condition for many

months, or even years. Diffuse suppuration, on the other hand, may be attended with little local suffering, but very soon becomes the cause of much general excitement, and leads to the formation of disease in other parts. The termination of circumscribed abscess is generally favorable, however long it may have lasted, provided the matter be evacuated externally: whereas purulent infiltration in bone is usually fatal.

Chronic abscesses require, moreover, to be carefully distinguished from cases of softened tubercle, with which they appear to have been confounded. In the excellent memoir of M. Nélaton, published in Paris in 1837, we find the following description of encysted tubercle in the extremity of long bones. "When an encysted tubercle is developed in the extremity of a long bone, it is at first confined in the centre of the cancellous structure, not far from the articular extremity. It gradually increases, and approaches on one hand the cartilage, and on the other the circumference of the bone, external to the joint. If in the progress of its development it reaches the exterior of the bone, it escapes into the surrounding cellular tissue: an abscess is there formed, which increases and empties itself externally, leaving a fistulous communication with the interior of the bone. But if, on the contrary, it makes its way towards the articular surface, the cartilage with which it comes in contact is peforated, and the tubercular matter empties itself into the joint." M. Nélaton says that he has seen several examples of this unfavorable termination of the disease; and his observations are narrated with so much circumstantial detail, that we cannot doubt that he has actually traced the processes which he describes, and has related that which he himself has witnessed. But the cases of crude tubercle in adult bone to be found in our museums are so rare, we cannot but think that the frequency of its occurrence has been greatly exaggerated, and that M. Nélaton, and other continental writers, have included cases of softened tubercle and chronic abscess under one common description.

Chronic abscess may probably occur in any bone of the body. In the museum of the College of Surgeons there is a specimen where it had taken place in the clavicle; and Mr. Arnott has mentioned an instance of its having occurred in the femur. At King's College Hospital a case lately presented itself, where a circumscribed abscess had formed in the lower jaw, the bone around being greatly condensed and thickened. By far the majority of cases of chronic abscess, however, occur in the tibia, and almost always in the upper or lower extremity of that bone. The first case above related offers a peculiarity, the part affected having been towards the middle of the shaft.

When an abscess is formed in bone, important changes occur in the surrounding parts. The periosteum and adjacent bone become inflamed and thickened. This is followed by the formation of new bone, both in the cancellous structure, and on the surface of the original bone. The bony matter thus secreted corresponds to the deposition of lymph around an abscess in soft parts. That which is formed on the surface of the bone is readily recognised. It is disposed in layers, or in small irregular masses, and never presents the fibrous structure

of the original bone. This deposition may go on, as the bone in immediate contact with the pus is absorbed; so that, although the abscess is gradually making its way externally, it remains covered with the same thickness of bone as before.

Deposition of new bony matter occurs much more readily around the spongy extremities than upon the compact shafts of bone. In the former situation, it may take place to such an extent as to render it very difficult to say precisely what part of the bone was originally affected, and a trephine applied under these circumstances may fail to reach the seat of the disease.

After a circumscribed abscess is formed in bone, the parts around appear to accommodate themselves to its presence. This is accomplished, not by the fibres of the bone being pressed asunder, but by an actual absorption of the osseous substance. The intense pain experienced depends, doubtless, upon the extreme tension maintained upon the unyielding structure, and every fresh accession of pain results from a fresh secretion of fluid. The influence of some medicines in restraining the symptoms may probably depend upon their power of promoting the absorption of the more fluid part of the abscess. Thus we find that the iodide of potassium, given in doses of three or four grains, will sometimes be followed by a temporary abatement of the pain; and it would appear from the cases recorded, that, after the first attack of pain, the symptoms may remain in abeyance for almost an unlimited period, until some accidental cause produces a fresh secretion of fluid. The cavity then again becomes distended, and pain returns. A process analogous to pointing not unfrequently takes place, and the abscess may be thus evacuated.

In other cases deposition of bone goes on as fast as absorption, and the abscess cannot make its way out. It thus bears over towards the articular surface as the only direction in which resistance is not offered and may make its way into the joint. In such cases the cartilage is either perforated or absorbed.

Art. 35.—*Encephaloid Cancer mistaken for Aneurism.*

[The following case is selected for the purpose of exhibiting the difficulties of practice even in the most practised hands.]

The patient, a man æt. 52, was admitted into the Middlesex Hospital, January 20, 1852, under the care of Dr. Seth Thompson, for pain and swelling of the left leg.

The limb had been œdematous, and the skin permeated with large veins, for about ten weeks before admission; and it was soon discovered that this state of things was owing to the existence of a pulsating tumour situated within the abdomen, and easily felt between the umbilicus and Poupart's ligament. The patient was now transferred to Pepy's ward, and placed under the care of Mr. Moore. The tumour could be distinctly felt through the abdominal parietes, lying in the course of the external iliac artery, and yielded to the hand a strong pulsation, synchronous with the cardiac action. The tumour and the pulsation increased rapidly; and as there was no distinct evidence of

their being other than aneurismal, and a preponderance of opinion that they were of that nature, Mr. Moore proceeded to the deligation of the common iliac artery. The pulsations of the tumour ceased immediately, and the patient went on pretty well for a little while; but his system seemed unable to resist the shock of the operation, and he died a few days after the deligation of the vessel.

On a *post-mortem* examination, it was found that the tumour was of the encephaloid kind, and lay between two large arteries, which had communicated to the tumour the pulsations felt during life. It will be recollected that unavoidable errors of this kind have happened once or twice before in our hospitals; and it is plain that the most careful examination and the most consummate surgical skill can hardly preserve from such misapprehensions (notwithstanding stethoscopic skill).

Reported in the *Lancet*.

Art. 36.—*On the Diagnosis of Fractured Ribs.* By John Hilton, Esq., f.r.s.

(*Lancet*, March 13, 1852.)

[The following simple rules for diagnosis in cases of suspected fracture of the ribs, occur in a clinical lecture upon the subject, delivered at Guy's Hospital. In such cases, Mr. Hilton observes:]

1. There may be external ecchymosis, but this symptom may be entirely absent. 2. Sharp pain in a determinate locality on full inspiration; this pain is sometimes intense, and the constancy with which it is met with in different cases gives much importance to the symptom. The pain is caused by the compression of the intercostal nerve at the ends of the fractured rib on a strong inspiration, ordinary breathing giving little or no uneasiness; according as the direction of the fracture leads to the compression of the nerve, or to no such structural complication, so will there be more or less pain. Hence the reason why some patients suffer a great deal, and others but little pain. This association of pain is not peculiar to rib fractures. The same thing occurs in fracture of the anatomical neck of the humerus, which lesion may and does frequently cause compression and irritation of the circumflex nerve; the latter being forcibly caught or drawn between the fractured ends of the bone, produces intense pain at the part. 3. By placing your hand upon the sternum, you may feel crepitation as the breathing goes on—nay, the patient sometimes hears and feels it himself. 4. Great tenderness over a certain suspected spot is a symptom upon which great reliance cannot be placed. It is better to press forcibly upon one rib after the other near the sternum, during inspiration, from above downwards. With some attention you will thus be able to detect the broken rib by resisting the elevation of its sternal end whilst its vertebral extremity is in motion, and a further examination of the individual rib discovers the exact seat of the fracture. 5. You may be much assisted in your diagnosis by using auscultation, either with the stethoscope or the naked ear; the fine grating of the bones may sometimes be distinctly heard in this manner.

But, if in spite of careful examination, you cannot find any or all these symptoms, remember that it is far better to treat obscure and doubtful cases as if fracture of the ribs had been detected; you will err, if at all, on the safe side, and the therapeutical means necessary are so simple that you cannot possibly do your patient any harm.

Art. 37.—*New Form of Varicose Aneurism.* By M. Berard.

(*Mémoires de la Société de Chirurgie,* 1849.)

Two different lesions may follow as a consequence of the simultaneous wound of a contiguous artery and vein. In certain cases the blood passes directly from the artery into the vein; the latter becomes dilated either in the exact locality of the wound, or at some distance between it and the nearest branch. This is *aneurismal varix.*

In other cases a tumour is formed, the size of which is limited by the surrounding cellular tissue, and into which the arterial blood penetrates. The communication of the tumour with the vein gives it some other peculiarities, and it is called *varicose aneurism.*

Writers have generally mentioned the following as the characters of varicose aneurism:—A canal, of greater or less length, runs between the artery and the vein, establishing a communication between the two vessels; at some point there is a sac, bounded by cellular tissue. This lesion, which is more rare than the other, has only been submitted to dissection three or four times, and therefore M. Berard reports the following example:

A man, æt. 40, who was in the habit of being bled for some cerebral affection, had the artery opened by mistake in 1840; a bandage was placed on the puncture. In the morning after, the man complained of a pain in the arm, with the sensation of burning along the course of the vessels. Attributing this to the bandage, he loosened it, when the limb began to swell; the tumefaction reached the shoulder and wrist, the skin becoming at length quite black; soon after pulsation became perceptible in the fold of the elbow and lower part of the arm.

After the tumefaction had subsided, a soft fluctuating tumour was found on the inner side of the tendon of the biceps; its pulsations were distinct and isochronous with those of the arteries. The entry of blood into the tumour was accompanied with a distinct bruit. In addition to this a bruit was propagated along the veins, but of a distinctly different character from that which was heard in the tumour. From these signs the author at once perceived that he had a combined case of varicose aneurism and aneurismal varix. After a variety of treatment he found it necessary to tie the brachial artery.

Compression being made accordingly in the superior two thirds of the track of the vessel, an incision was made in the bend of the elbow, exposing the anterior portion of the sac; this was likewise opened, giving issue to dark fluid blood, mixed with clots. The upper portion of artery when it entered the sac was then ligatured. It was now found that, although the vessel was tied, blood continued to pour into the sac from below, and the author with great difficulty found the lower opening of the vessel, which was hidden from view by the

interposition of the vein; in fact the exact condition of the parts was this:—The artery presented a large transverse wound on its anterior surface; in front of the artery lay the vein, glued to it, and itself pierced beneath by a wound corresponding to that of the artery, and above by another of the same dimensions. Above this was the aneurismal pouch, so that the blood from the artery traversed the vein in reaching it.

The explanation of these lesions given by the author is, that during the venesection the vein was pierced through, and the artery opened; the lower puncture in the vein remained open while the upper cicatrised, and an aneurismal varix ensued. After a time the impulse of the blood upon the upper surface of the vein caused the puncture to reopen, and an aneurismal pouch then formed in the external coat of the vein and cellular tissue.

Art. 38.—*Aphorisms on Gun-shot Wounds.*

By G. J. Guthrie, Esq., F.R.S.

(*Lancet*, Feb. 14, 1852.)

1. A wound made by a musket-ball is essentially contused, and attended by more or less pain according to the sensibility of the sufferer, and the manner in which he may be engaged at the moment of injury. A musket-ball will often pass through a fleshy part, causing only the sensation of a sudden and severe, although sometimes of a trifling blow. If it merely strike the same part without rupturing the skin, the pain is often great.

2. Wounds from a musket-ball do sometimes bleed considerably at the moment of injury, and for some little time afterwards, although no large vessels shall be injured to render the bleeding inconvenient or dangerous; and as a large artery is rarely injured by a musket-ball, the application of a tourniquet is seldom if ever necessary, unless a vessel of some magnitude should be torn or partially divided.

3. When a limb is carried away by a cannon-shot, any destructive bleeding usually ceases with the faintness and failure of strength subsequent on the shock, and a hæmorrhage thus spontaneously suppressed does not generally return; the application of a tourniquet is not then necessary, unless as a precautionary measure, when it should be applied loosely, and the patient, or some one, shown how to tighten it if necessary. A musket-ball will often pass so close to a large artery, without injuring it, as to lead to the belief that the vessel must have receded from the ball by its elasticity. A ball passed between the femoral artery and vein of a soldier at Toulouse without doing more injury than a contusion, which gave rise to inflammation and closure of the vessels, followed by gangrene of the extremity. General Sir Lowry Cole was shot through the body at Salamanca, immediately below the left clavicle; a part of the first rib came away, and the artery at the wrist became, and remained, much diminished in size. General Sir Edward Pakenham was shot through the neck on two different occasions, the tract of each wound being apparently through the great vessels. The first wound gave him a curve in his

neck, the second made it straight. His last unfortunate wound, at New Orleans, was directly through the common iliac artery, and killed him on the spot. Colonel Duckworth, of the 48th regiment, received a ball through the edge of his leather stock at Albuhera, which divided the carotid artery, and killed him almost instantaneously.

4. Secondary hæmorrhage of any importance does not *often* occur. On the separation of the contused parts, or sloughs, a little blood may be occasionally lost; but it is then generally caused by the impatience of the surgeon, or the irregularity of the patient, and seldom requires attention.

5. A large artery does sometimes give way by ulceration between the eighth and the twentieth days; but the proportion is not more than four cases in a thousand, requiring the application of a ligature; exclusive of those formidable injuries caused by broken bones, or the inordinate sloughing caused by hospital gangrene, when not properly treated.

6. A certain constitutional alarm or shock follows every serious wound; the continuance of which excites a suspicion of its dangerous nature, which nothing but its subsidence, and the absence of symptoms peculiar to the internal part presumed to be injured, should remove. The opinion given under such circumstances should be very guarded; for if this symptom of alarm should continue, great fears may be entertained of hidden mischief. Colonel Sir W. Myers was shot at Albuhera at the head of the Fusilier brigade, at the moment of victory, by a musket-ball, which broke his thigh, and lodged. The continuance of the alarm and anxiety satisfied the author it had done other mischief. He died next day, of gangrene of the intestines. General Sir Robert Crawford was wounded, at the foot of the lesser breach at the storming of Ciudad Rodrigo, by a musket-ball, which entered the outer and back part of the shoulder, and came out at the axilla. There was a third wound, a small slit in the side, apparently too small to admit a ball. The continuance of the anxiety and alarm pointed out some hidden mischief, which the author declared had taken place; and when he died, his surgeon found the ball loose in his chest. It had been rolling about on his diaphragm. Surgery was not advanced enough in those days, to point out the situation, or to authorise an attempt for the removal of the ball. It must in future be done.

7. It is not always possible from their appearance to decide which opening is the entrance, which the exit of a ball; or when two holes are distant from each other, to ascertain whether they have been caused by one, or by two distinct balls. When a ball is not impinging with much impetus, it may become a penetrating, without being much of a contused wound, which will close in and heal with little suppuration. If the ball do not press upon, or interfere with some important part, the little inflammation which follows may give rise to the formation of a sac, which adheres to and possibly keeps it quiet for years, if not for life.

8. The wound made by the entrance of a musket-ball is usually circular, depressed, of a livid colour, and capable of admitting the little finger, the exit being more ragged, and not depressed, whilst it is sometimes little more than a small slit or rent, although at others, as

in the face or in the back of the hand, it may be much torn, giving to an otherwise simple wound a frightful appearance, but which is not seen in the thigh, or other equally firm fleshy part.

9. Wounds from flattened or irregular-shaped musket-balls, pieces of shells, or other sharp-edged destructive instruments, are often very much lacerated, and their entrance is less marked. The parts thus torn can generally be preserved, and the wound healed with little comparative loss of substance.

10. When it is desirable to ascertain the exact course of a ball, and, if possible, the internal part injured by it, the sufferer should be placed in the position he was in on receiving the injury, and with especial reference to the probable situation of the enemy, when that will often become very intelligible which was before indistinct.

11. When one opening only can be seen, it is presumed the ball has lodged; but this does not follow, although the finger of the surgeon may pass into the wound for some distance. At the battle of Vimiera, the author pulled a piece of shirt, with a ball at the bottom of it, out of the thigh of an officer of the 40th regiment, into which it had gone for at least three inches. After the battle of Toulouse, a ball, which penetrated the surface of the chest, and passed under the pectoral muscle for two inches, was ejected by the elasticity of the rib against which it struck. Scarcely any inconvenience followed, and the officer rapidly recovered.

12. The treatment of simple gun-shot or flesh wounds should be, under ordinary circumstances, as simple as themselves. Nothing should be applied but a piece of linen or lint, wetted with cold water; this may be retained by a strip of sticking-plaster, or any other thing applicable for the purpose of keeping the injured part covered. A compress of wet linen will be useful, moistened with iced water when procurable; and a few inches of a linen bandage may be sewed on, to prevent the compress from changing its position during sleep. If the wound is tender, a little oil, lard, or simple ointment may be placed over it. A roller as a surgical application is useless, if not injurious. At the first and second battles in Portugal, every wound had a roller applied over it, which soon became stiff, bloody, and dirty. They did no good, were for the most part cut off with scissors, and thus rendered useless. When really wanted at a latter period, they were not forthcoming. An advancing army cannot, and ought not to carry with it casks full of rollers; and the apothecary-general had better have, instead, one large case full of good wax candles; for although every regimental surgeon ought to have four in his panniers, kept as carefully for emergencies as his capital instruments, they will require from time to time to be replaced. No roller should be more than two inches and a quarter wide, and made of good strong coarse cotton, very much in fact the reverse of the rollers instrument-makers like to supply.

13. Cold or iced water may be used as long as cold is grateful to the sufferer. When it ceases to be so, it should be exchanged for warm, applied in any convenient way which modern improvements have suggested, whether by piline, gutta-percha, &c. An evaporating poultice may be used in private life, but no poultices should be permitted in a military hospital, until the principal officer in charge is

satisfied they are necessary. They are generally cloaks for negligence; and certain precursors of amputation in all serious injuries of bones and joints. They are used to alleviate pain, stiffness, swelling, the uneasiness arising from cold, and to encourage the commencing or impeded action of the vessels towards the formation of matter. As soon as the effect intended has been obtained, the poultice should be abandoned, and recourse again had to water, hot or cold, with compress and bandage. The author was in the habit of calling a poultice a *cover-slut.*

14. Many simple flesh wounds are cured in four weeks; the greater part in six. Fresh air and cold water are essential. Purgatives may be occasionally given, and abstinence is an excellent remedy. Emetics, bleeding, and something approaching to starvation as to solids, are of great importance if the sufferers should be irregular in their habits, or the inflammatory symptoms run high.

15. In wounds of muscular parts inflammation usually occurs from twelve to twenty-four hours after the injury, and the vicinity of the wound becomes more sensible to the touch, with a little swelling and increase of discoloration. A reddish serous fluid is discharged, and the limb becomes stiff and nearly incapable of motion, from its causing an increase of pain. These symptoms are gradually augmented on or about the third day; the inflammation surrounding the wound is more marked; the discharge is altered, being thicker; the action of the absorbents on the edges of the wound may be observed; and, on the fourth or fifth, the line of separation between the dead and living parts will be very evident. The wound will now discharge purulent matter mixed with other fluids, which gradually diminish as the natural healthy actions take place. The inside of the wound, as the process of separation proceeds, changes from a blackish-red colour, to a brownish yellow, moistened by a little good pus. On the fifth and sixth days, the outer edge of the separating slough is distinctly marked, and begins to be displaced; the surrounding inflammation extends to some distance; the parts are more painful and sensible to the touch; the discharge is more purulent, but not great in quantity. On the eighth or ninth day, the slough is, in most cases, separated from the edges of the track of the ball, and hanging in the mouth of the wound, although it cannot yet be disengaged; the discharge increases, and the wound becomes less painful to the patient, although frequently more sensible when touched.

If there be two openings, the exit of the ball, or the counter opening, is in general much the cleanest, being often in a fair granulating state before the entrance of the ball is free from slough. If the inflammation have been smart, the limb is at this time a little swelled for some distance around; fibrin and serum are thrown out into the cellular membrane, or areolar tissue, as it is now termed; the redness diminishes; the sloughs are discharged, together with any little extraneous substances which may be in the wound; and there is frequently a slight bleeding, if the irritable granulations are roughly treated. The limb, on the twelfth, and even fifteenth day, retains the appearance of yellowness and discoloration which ensues from a bruise, and which continues a few days longer. The sloughs do not

sometimes separate until this period, and, in persons slow to action, not even until a later one. The wound now contracts; the middle portion of the track first closes, and is no longer pervious; the lower opening soon heals, whilst that made by the entrance of the ball continues to discharge for some time, and towards the end of six weeks, or sometimes two months, finally heals with a depression and cicatrix, marking distinctly the injury that has been received.

16. The state of constitution, the difficulties and distresses of military warfare, exposure to the inclemency of the weather, or the imprudence of individuals, will sometimes bring on a train of serious symptoms, in wounds apparently of the same nature. After the first two or three days, the symptoms gradually increase, the swelling is much augmented, the redness extends, and the pain is more severe and constant. The wound becomes dry, stiff, with glistening edges, the general sensibility is increased, the system sympathises, the skin becomes hot and dry, the tongue loaded, the head aches, the patient is restless and uneasy, the pulse full and quick, there is fever of the inflammatory kind. The swelling of the part increases from deposition in the areolar tissue to a considerable extent above and below the wound, and the inflammation, instead of being entirely superficial or confined to the immediate track of the ball, spreads widely. The wound itself can hardly be borne to be touched; it discharges but little, and the sloughs separate slowly; pus soon begins to be secreted more copiously, not only in the track of the wound, but in the surrounding parts; sinuses may form in the course of the muscles, or under the fascia, and considerable surgical treatment be necessary, whilst the cure is protracted from three to four, or even six months; and is often attended for a longer period with lameness, from contraction of the muscles or adhesions of the areolar tissue. The parts, from having been so long in a state of inflammation, are much weaker, and if the injury have been in the lower extremity, the leg and foot swell on any exertion, which cannot be performed without pain and inconvenience for a considerable time. The treatment should be active; the patient ought to be bled, vomited, purged, kept in the recumbent position, and cold applied so long as it shall be found agreeable to his feelings; when that ceases to be the case, fomentations ought to be resorted to, but they are to be abandoned the instant the inflammation is subdued and suppuration well established. The feeling of the patient will determine the period, and it is better to begin a day too soon than one too late. If the inflammation be superficial, leeches will not be of the same utility as when it is deep-seated; but then they must be applied in much greater numbers than are usually recommended. The roller and graduated compresses are the best means of cure in the subsequent stages, with change of air, and friction to the whole extremity, which alone, when early and well applied, will often save months of tedious treatment. If the limb become contracted and the cellular membrane thickened, it is principally by friction (shampooing) that it can be restored to its natural motion.

17. If the ball should have penetrated without making an exit, or have carried in with it any extraneous substances, the surgeon must, if possible, ascertain its exact situation, and remove it and any foreign

bodies which may be lodged;—indeed, if there be time, every wound should be examined so strictly as to enable the surgeon to satisfy himself that nothing has lodged. This is less necessary where there are two corresponding openings evidently belonging to one shot; but it is imperiously demanded of the surgeon, where there is one opening only, even if that be so much lacerated as to lead to the suspicion of its being a rent from a piece of a shell; for it is by no means uncommon for such missiles, or a grape-shot, to lodge wholly unknown to the patient, and to be discovered by the surgeon at a subsequent period, when much time has been lost and misery endured. A soldier during the siege of Badajoz had the misfortune to be near a shell at the moment of its bursting, and was so much mangled as to render it necessary to remove one leg, an arm, and a testicle (a part of the penis and scrotum being lost). In one of the flesh-wounds in the back part of the thigh and buttock a large piece of shell was lodged, and kept up considerable irritation until it was removed. The man recovered.

18. In examining a wound, a finger should be gently introduced in the course of the ball, to its utmost extent, and in parts connected with life, or liable to be seriously injured, it is the only sound usually admissible. Whilst this examination is taking place, the hand of the surgeon should be carefully pressed upon the part opposite where the ball may be expected to lie, by which it may perhaps be brought within reach of the finger, and for want of which precaution, it may be missed by a very trifling distance. Whilst the finger is in the wound the limb may be thrown as nearly as possible into that action which was about to be performed on the receipt of the injury, when the contraction of the muscles, and the relative change of the parts, will more readily allow the course of the ball to be followed. If this should fail, attention should be paid to the various actions of the limb, the attendant symptoms arising from parts affected, and what may be called the general anatomy of the whole circle of injury. A muscle, in the act of contraction, may oppose an obstacle to the passage of an instrument in the direction the ball has taken, and especially if it should have passed between tendons or surfaces loosely connected by cellular membrane; as by the side of or between the great blood-vessels, which by their elasticity may make way for the ball, and yet impede the progress of a sound. When the ball is ascertained to have passed beyond the reach of the finger, a blunt silver sound or elastic bougie may be used, and the opposite side of the limb should be carefully examined, and pressure made on the wounded side, when it will probably be found more or less deeply seated. If the ball should not be discoverable by these means, the surgeon should consider every symptom, and every part of anatomy connected with the wound, before he decides on leaving the ball to the operations of nature.

19. It is unnecessary to dilate a wound without a precise object in view, which might render an additional opening necessary. This dilatation or opening should always be carried through the fascia of the limb. A wound ought not to be dilated, because such operation may at a more distant period become necessary. The necessity must first be seen, when the operation follows of course.

Suppose that a man be brought for assistance with a wound through

the thigh, in the immediate vicinity of the femoral artery, and which he says bled considerably at the moment of injury, but had ceased. Is the surgeon warranted in cutting down upon the artery, and putting ligatures upon it on suspicion? Every man in his senses ought to answer, No. The surgeon should take the precaution of applying a tourniquet loosely on the limb, and of placing the man in a situation where he can receive constant attention in case of need; but he is not authorised to proceed to any operation unless another bleeding should demonstrate the injury and the necessity for suppressing it. By the same reasoning, incisions are not to be made into the thigh on the speculation that they may be hereafter required. If the confusion which has enveloped this subject be removed, and bleeding arteries, broken bones, and the lodgment of extraneous substances, be admitted to be the only legitimate causes for dilating wounds in the first instance, the arguments in favour of primary dilatation in other cases, must fall to the ground.

When the inflammation, pain, and fever run high, an incision should be made by introducing the knife into the wound, and cutting for the space of two, three, or four inches, according to circumstances, in the course of the muscles, carefully avoiding any other parts of importance. The same should be done at the inferior or opposite opening, if mischief be seriously impending, not so much on the principle of loosening the fascia as on that of taking away blood from the part immediately affected, and of making a free opening for the evacuation of the fluids about to be effused.

It is no less an advantageous practice in the subsequent stages of gun-shot wounds, where sinuses form and are tardy in healing. A free incision is also very often serviceable when parts are unhealthy, although there may not be any considerable sinus. Upon the necessity of it where bones are splintered, there is no occasion in this place to insist.

20. In making incisions for the removal of balls in the vicinity of large vessels, particularly in the neck, the hand should always be unsupported, in order to prevent an accident from any sudden movement of the patient. This caution is the more necessary on the field of battle, where many things may give rise to sudden alarm. At the affair of Saca Parte, near Alfaiates, in Portugal, the author stationed himself behind a small watch tower, and the wounded were first brought to this spot for assistance. A howitzer had also been placed upon it, being rising ground; and at the moment he was extracting a ball situated immediately over the carotid artery, the gun was fired, to the inexpressible alarm of surgeon, patient, and orderly, who bolted in all directions. From the author's hand being unsupported, no mischief ensued and the operation was completed as soon as all had recovered their usual serenity. When a ball is discovered on the opposite side of a limb, through which it has nearly penetrated, but has not had sufficient power to overcome the resistance and elasticity of the skin, it should be removed by incision. An opening is thus obtained for the evacuation of any matter which may be formed in the long track of such a wound, and any other extraneous bodies are more readily extracted. When a ball has penetrated half through the thick part of

the thigh, in such a direction that it cannot be readily removed by the opening at which it entered; or, from the vicinity of the great vessels, it may be considered unadvisable to cut for it in that direction; or if the ball cannot be distinctly felt by the finger through the soft parts, it ought not to be sought for at the moment, for an incision of considerable extent will be required to enable the surgeon to extract it. Much pain will be caused, and higher inflammation may follow than would ensue if the wound were left to the efforts of nature alone, by which, in a short time, the ball would be in all probability brought much nearer to the surface, and might be more safely extracted. It frequently happens, that after a few days or weeks, a ball will be distinctly felt in a spot where the surgeon had before searched in vain for it. A wound will frequently close without further trouble, the ball remaining without inconvenience in its new situation; and the patient not being annoyed by it, does not feel disposed to submit to pain or inconvenience for its removal. A very strong reason for the extraction of balls during the first period of treatment, if it can be safely accomplished, is, that they do not always remain harmless, but frequently give rise to distressing or harassing pains in or about the part, which often oblige the sufferer to submit to their extraction at a later period, when their removal is infinitely more difficult, and may be more distressing than at the moment of injury.

Nothing appears more simple than to cut out a ball which can be felt at the distance of an inch, or even half an inch below the skin, but the young surgeon often finds it more difficult than he expected, because he makes his incision too small; and cannot at all times oppose sufficient resistance to prevent the ball from retreating before the effort he makes for its expulsion with the forceps or other instrument. The ball also requires to be cleared from the surrounding cellular substance, to a greater extent than might at first be imagined; for all that seems to be required, is, that a simple incision be made down to the surface of it, when it will slip out, which is not always found to be the case. When a ball has been lodged for years, a membranous kind of sac is formed around it, which shuts it in as it were from all communication with the surrounding parts. If it should become necessary to extract a ball which has been lodged in this manner, the membranous sac will often be found to adhere so strongly to the ball, that it cannot be got out without great difficulty, and sometimes not without cutting out a portion of the adhering sac.

It often occurs that a ball lodges and cannot be found, especially where it has struck against a bone, and slanted off in a different direction. If the ball should lodge in the cellular tissue between two muscles, it often descends by its gravity to a considerable distance, and excites a low degree of irritation, which slowly brings it to the surface, or terminates in abscess. Colonel Ross of the Rifle Brigade, was wounded at the battle of Waterloo, by a musket-ball, which entered at the upper part of the arm and injured the bone. More than one surgeon had pointed out the way by which it had passed under the scapula and lodged itself in some of the muscles of the back. About a year afterwards, the author extracted it close to the elbow, the ball lying at the bottom of an abscess, which was only brought near

the surface by the use of flannel, and by desisting from all emollient applications.

21. A ball will frequently strike a bone, and lodge, without causing a fracture. It will even go through the lower part of the thigh-bone, between or a little above the condyles, merely splitting without separating it, and some balls have lodged in bones for years, with little inconvenience. It should nevertheless be a general rule, not to allow a ball to remain in a bone, if it can be removed by any reasonable operation. The rule is not entirely devoid of exception. Lieut. Colonel Dumaresq, aide-de-camp to the present Lord Stafford, was wounded at Waterloo by a ball which penetrated the right scapula, and lodged in a rib in the axilla. The thoracic inflammation nearly cost him his life, but he ultimately quite recovered, and died many years afterwards of apoplexy.

22. When a bayonet is thrust into the body, it is a punctured wound, made by direct pressure; when of little depth, much inconvenience rarely ensues, and the part heals slowly, but surely, under the precaution of daily pressure. A punctured wound, extending to considerable depth, labours under disadvantages in proportion to the smallness of the instrument, and the differences of texture through which it passes. When the instrument is large, the opening made is in proportion, and does not afford so great an obstacle to the discharge of the fluids poured out or secreted, as when the opening is small. Lance wounds are therefore less dangerous than those inflicted by the bayonet. When a small instrument passes deep through a fascia, it makes an opening in it which is not increased by the natural retraction of parts, inasmuch as it is not sufficiently large to admit of it; and which opening, small as it is, may be filled or closed up by the soft cellular tissue below, which rises into it, and forms a barrier to the discharge of any matter which may be secreted beneath. If the instrument should have passed into a muscle, it is evident, that if that muscle were in a state of contraction at the moment of injury, the punctured part must be removed to a certain distance from the direct line of the wound in a state of relaxation, and *vice versâ*. The matter secreted, and more or less in almost every instance will be secreted, cannot in either case make its escape, and all the symptoms occur of a spontaneous abscess deeply seated below a fascia. That inflammation should spread in a continuous texture, is not uncommon; that matter when confined, should give rise to great constitutional disturbance, is, if possible, less so; but that this disturbance takes place without the occurrence of inflammation, or the formation of matter, may be doubted; and it may be concluded, that there is no peculiarity in punctured wounds that may not be accounted for in a satisfactory manner. Serious effects have been attributed to injuries of nerves, but without sufficient reason; nevertheless, those who have seen locked-jaw follow a very simple scratch of the leg from a musket-ball, more frequently than from a greater injury, are not surprised at any symptoms of nervous agitation that may occur after punctured wounds. As many bayonet wounds through muscular parts heal with little trouble, it is time enough to dilate them when assistance seems to be required. Cold water should be used at first; care should be taken

not to apply a roller or compress of any kind over the wound; and matter, when formed, should be frequently pressed out.

23. It sometimes happens that a cannon-ball strikes a limb, and without apparently doing much injury to the skin, so completely destroys the internal textures, that gangrene takes place almost without an effort on the part of nature to prevent it. This kind of injury was formerly attributed to the wind of a ball; but no one who has seen noses, ears, &c., injured or carried away, and all parts of the body grazed, without such mischief following, can believe that either the wind, or the electricity collected by it can produce such effect.

The patient is sensible of having received a severe blow on the part affected, which does not show much external sign of injury, the skin being often apparently unhurt or only grazed; the motion of the part is lost, and it is insensible; the bone or bones may or may not be broken, but in either case the sufferer, if the injury be in the leg, is incapable of putting it to the ground. After a short time the limb changes colour in the same manner as when severely bruised, and the necessary changes rapidly go on to gangrene. The limb swells, but not to any extent, and more from extravasation between the muscles and the bones than from inflammation, which, although it is attempted to be set up, never attains to any height. The mortification which ensues tends to a state between the humid and the dry, and rather more to the latter than the former. These cases are not of frequent occurrence, and are not commonly observed until after the blackness of the skin, and the want of sensibility and motion, attract attention; for the patient is generally stupified at first by the blow, and the part or parts about the injury feel benumbed. I made these cases an object of particular research after the battle of Waterloo, but could find only one among the British wounded. The man stated that he had received a blow on the back part of the leg, he believed from a cannon-shot, which brought him to the ground, and stunned him considerably. On endeavouring to move, he found himself incapable of stirring, and the sensibility and power of motion in the limb were lost. The leg gradually changed to a black colour, in which state he was carried to Brussels. When I saw it, the limb was black, apparently mortified, and cold to the touch; the skin was not abraded; the leg was not so much swollen as in cases of humid gangrene; the mortification had extended nearly as high as the knee; there was no appearance of a line of separation; and the appearances of inflammation were so slight, that amputation was performed immediately above the knee. On dissecting the limb, I found that a considerable extravasation of the bloody fluid had taken place below the calf of the leg, and in the cavity thus formed some ineffectual attempts at suppuration had commenced. The periosteum was separated from the tibia and fibula; the popliteal artery was, on examination, found closed in the lower part of the ham by coagulated lymph, proceeding from a rupture of the internal coat of the vessel. Two inches below this the posterior tibial and fibular arteries were completely torn across, and gave rise, in all probability, to the extravasation. The operation was successful. The proper surgical practice in such cases is to amputate as soon as the extent of the injury can be hardly necessary to give a caution not

to mistake a simple bruise or ecchymosis for mortification. To prevent such an error leading to amputation, the Baron Larrey has directed an incision to be previously made into the part, and to this there can be no objection.

24. When a large shot or other solid substance has injured a limb to such an extent only as admits of the hope of its being possible to save it, this hope is sometimes found to be futile, at the end of three or four days, from a failure of power in the part below the injury to maintain its life for a longer time; mortification is obviously impending. In military warfare, uncontrollable events often render amputation unavoidable in such a case. Under more favorable circumstances, the surgeon should be guided by the principle laid down of *constitutional* and *local* mortification; and although the line cannot perhaps be distinctly drawn between them at the end of three, four, or more days, it will be better to err on the side of amputation than of delay. If the limb should be swollen or inflamed to any distance, with some constitutional symptoms, in a doubtful habit of body, the termination will in general be unfavorable, whichever course be adopted, more particularly if the amputation must be done above the knee. The consideration of the circumstances in which the patient is placed, his age, and his habit of body, should have great weight in forming a decision, in the first instance, as to the propriety of attempting to save the limb.

25. Whenever the main artery of a limb is injured by a musket-ball, mortification of the extremity will frequently be the result, particularly if it be the femoral artery; and it will be of certain occurrence if both artery and vein are injured, although they may not be either torn or divided. There may not then, be such a sudden loss of blood, in considerable quantity, as to lead to the suspicion of the vessel being injured. The fact is known from the patient's soon complaining of coldness in the toes and foot, accompanied by pain, felt especially in the back part or calf of the leg, together with an alteration of the appearance of the skin of the toes and instep, which, when once seen, can never be mistaken. It assumes the colour of a tallow candle, and soon of mottled soap; although there may be little loss of temperature under ordinary circumstances of comfort, there is a feeling of numbness, but it is only at a later period that the foot becomes insensible. This change marks the extent of present mischief. The temperature of the limb above is somewhat higher than natural, and some slight indications, of inflammatory action may be observed as high as the ham, and the upper part of the tibia in front; and it is at these parts that the mortification usually stops when it is arrested. The general state of the patient, during the first three or four days, is but little affected, and there is not that appearance of countenance which usually accompanies mortification from constitutional causes. In a day or two more, the gangrene will frequently extend, when the limb swells, becomes painful, and more streaked or mottled in colour; the swelling passes the knee, the patient becomes feverish, anxious, delirious, and dies.

An extreme case will best exemplify the practice to be pursued. A soldier is wounded by a musket-ball at the upper part of the middle

third of the thigh, and on the third day the great toe is clearly gangrenous. What is to be done? Wait with the hope that the mortification will not extend. Suppose that the approaching mortification has not been observed until it has invaded the instep. What is to be done? Wait, provided there are no constitutional symptoms; but if they should present themselves, or the discoloration of the skin should spread, amputation should be performed forthwith, for such cases rarely escape with life.

Where in such a case should the amputation be performed? I formerly recommended that it should be done at the part injured in the thigh. The author does not now advise it to be done there at an early period, when the foot only is implicated, but immediately below the knee, at that part where, if mortification ever stops and the patient survives, it is usually arrested; for the knee is by this means saved, and the great danger attendant on an amputation on the upper third of the thigh is avoided. The upper part of the femoral artery, if divided, rarely offers a secondary hæmorrhage. The lower part, thus deprived by the amputation of its reflex blood, can scarcely do so; and if it should, the bleeding may be suppressed by a compress. The blood will be dark-coloured. If the upper end should bleed, the blood will be arterial, and by jets, and the vessel must be secured by ligature.

26. When from some cause or other amputation has not been performed, and the mortification has stopped below the knee, it is recommended to be amputated above the knee after a line of separation has formed between the dead and the living parts. This should not be done. The amputation should be performed in the dead parts, just below the line of separation, in the most cautious and gentle manner possible; the mortified parts which remain being allowed to separate by the efforts of nature, a joint will be saved, and the patient have a much better chance for life.

27. A wound of the axillary artery rarely leads to mortification of the fingers or hand. If it should do so, the principle of treatment should be similar, although the saving of the elbow is not so important as that of the knee; neither is the amputation in the axilla, below the tuberosities of the humerus, as dangerous as that above the knee.

28. Mortification, after the sudden application of intense cold or heat, is to be treated on similar principles.

29. When a nerve, or plexus of nerves, conveying sensation and motion, and going to a part or an extremity of the body, is divided, the part or limb is deprived of three great qualities—motion, sensation, and the power of resisting with effect the application of a degree of heat or of cold which is innocuous when applied in a similar manner to the opposite or sound extremity. In other words, it will be scalded by hot water and frost-bitten by iced water, which are harmless when applied to another and a healthy part.

An officer received, at the battle of Salamanca, two balls, one underneath the left clavicle, which was supposed to have divided the brachial plexus of nerves, as the arm dropped motionless and without sensation to the side. The other ball passed through the knee-joint, which suppurated. The left side of the chest became affected; he suffered from severe cough, followed by hectic fever, and was evidently

about to sink. As a last chance, the author amputated his leg above the knee, after which he slowly recovered. Fourteen years afterwards, he showed him his arm in the same state, and told him he had been indicted for a rape, but that the magistrates, seeing the wooden leg and the useless arm, in admitting the attempt, would not assent to the committal of that offence.

30. When one nerve only of several going to an extremity, such as the arm and hand, is divided, the loss sustained is confined to the part more immediately supplied by the injured nerve. Thus, if the ulnar nerve only is divided, the little finger and the adjacent side of the ring-finger suffer, perhaps in some degree the inner side of the thumb; if the median nerve, the thumb and other fingers; if the radial, the back of the hand, next the thumb. In some instances there seems to be a kind of collateral communication, by which a degree of sensibility is after a time recovered.

31. If any foreign substance should lodge in, and continue to irritate the nerve, the wounded part often becomes so extremely painful as not to be borne. The nerve at that part forms a tumour of a most painful character, requiring removal, or in extreme cases even the amputation of the extremity.

32. After an ordinary amputation, the extremity of a nerve enlarges so as to resemble a leek, and if this should adhere to the cicatrix of the wound, painful symptoms, referred to the toes and other parts of the removed leg, are experienced often to an almost unbearable degree, when it must be treated in a similar manner to obtain relief. The pain apparently felt in and referred to the toes is merely the effect of irritation of the extremity of the nerve.

33. Wounds or injuries of nerves, which do not entirely divide the trunk or a principal branch given off from a plexus of nerves, may give rise to general as well as local symptoms—that is, by sympathy, connection, or continuity of disease, other nerves and organs of the body are affected. This applies also to the spinal marrow, when the injury does not destroy at once. General Sir James Kempt was wounded at the storming of the Castle of Badajos, on the inside of the left great toe, by a musket ball, which, from the appearance of a slit-like opening, was supposed to have rebounded from the bone, but was discovered a fortnight afterwards, flattened and lying between this and the next toe. Inflammation had ensued, followed by great irritability and numerous spasmodic attacks, appearing to render locked jaw probable. The spasms soon became more general, extending from the foot to the head, but tetanus did not take place; on his return to England they gradually subsided, but he did not sleep at night for a year. After the battle of Waterloo the spasms became more frequent and troublesome, attacking the muscles at the back of the neck and throat, causing considerable anxiety. The attack was often traced to exposing the foot to cold or to undue pressure, and frequently to derangement of stomach, although he was most regular in diet. After the lapse of six or seven years these severe symptoms subsided, but he now, at the end of forty years, suffers occasionally from them.

34. Brigade-Major Bissett was wounded, on horseback, in the

Kaffir war, by a musket-ball, which entered on the outside of the lower part of the left thigh, passed upwards across the perineum, wounding the rectum within the anus—from which he lost a quantity of blood—and came out through the pelvis on the opposite side. The course of this ball was accounted for by the fact that he saw the Kaffir who shot him standing some yards below him when he fired. The ball, in its passage upwards and across the thigh, injured the great sciatic nerve, and the consequence is continued pain in the toes, instep, and foot, with contraction of the muscles, and lameness, together with the usual incapability of bearing heat or cold, particularly the latter, against which he is peculiarly obliged to guard. The skin shows no sign of discoloration or derangement. Position gives the explanation why the ball took such a peculiar course; the symptoms show the nature of the injury. From other effects he has perfectly recovered, but his leg is comparatively as useless to him as an artificial one, whilst it is a constant source of suffering, sometimes aggravated to that of misery.

35. The cases related elsewhere, of mortification taking place in the foot and leg, after the division of the principal artery in the thigh, show that the maintenance of the life of a part depends on the blood. The cases now related show that neither an injury nor the division of the principal nerve, nor, perhaps, all the nerves going to a part, will destroy that life. The complete failure of the circulation in a part such as the foot, impairs but does not totally destroy the sensibility imparted by the nerves, until some hours—nay, days—after the loss of life has taken place, nor until decomposition is about to occur. An injury, then, to the nerve, causes great pain in the parts supplied by it; some loss of the power of motion, some deprivation of its ordinary sensibility, as shown by a feeling of numbness, and an incapability, to a certain extent, of resisting heat or cold. When all the nerves are divided, the power of moving the limb is lost, as well as its sensibility in a general sense. The temperature remains at a natural standard under ordinary circumstances, but no extra evolution of heat can take place by which cold is resisted, nor any absorption of it, which perhaps renders the application of a high temperature, particularly when combined with moisture, harmless. The circulation is capable of maintaining the ordinary heat of a part although it is deprived of the influence of the special nerves of sensation and of motion, but a greater evolution of heat appears to depend on something communicated by the nerves in a state of integrity. In the case of Sir P. Broke, this something appeared to be derived from the brain, on which part the wound was inflicted, and the transmission of which was interrupted by the injury. The evolution of animal heat has of late been supposed to be dependent on electricity, from the resemblance which exists between it and the nervous power, although the attempts to identify them have not been successful. That the evolution of heat is the result of nervous power appears to be indisputable; in what that power consists physiologists have yet to ascertain.

36. The best means of mitigating the pain, independently of the application of heat—and cold rarely does good, which the sufferer

soon finds out—is by the application of stimulants to the whole of the extremity affected, followed by narcotics. The tinctures of iodine and lyttæ, the oleum terebinthæ, the oleum tiglii, the liquor ammoniæ or the veratria, in the form of an embrocation, of such strength as will cause a good deal of irritation on the skin, short, however, of producing any serious eruption. After the parts have been well rubbed, opium, belladonna, or henbane, should be applied in the form of ointment; or the tinctures of opium, henbane, or aconite may in turn be applied on linen. Great advantage has been derived in many neuralgic pains from the application of *aconitine* carefully prepared, in the proportion of one grain to a drachm of lard, at which strength it will sometimes irritate almost to vesication, as well as allay pain.

When the pains return from exposure to cold, particularly in the lower extremity, great advantage has been derived from cupping on the loins, from purgatives, opiates, and the warm bath. Benefit has been obtained occasionally from quinine, belladonna, aconite, and stramonium, administered internally.

SECT. II.—NATURE AND CAUSES OF SURGICAL DISEASES.

Art. 39.—*On Diseases of the Chest supervening upon Accidents and Operations.* By Peyton Blakiston, M.D., St. Leonards.

(*Medical Times*, and *Gazette*, Feb. 14, 1852.)

[The author's object in this paper is to point out the important fact that the secondary inflammations which surgeons are frequently called upon to treat are generally asthenic, and require a corresponding treatment, both preventive and curative. The secondary diseases noticed are pericarditis, pleuritis, pneumonia, phthisis, and purulent deposits in the lungs. The author thus proceeds:]

Pericarditis.—The symptoms of the invasion of pericarditis were almost always obscure, two cases of which are recorded in my work on 'Diseases of the Chest.' The respiration was hurried, and the pulse always accelerated, never full or hard. There was either no pain at all, or else it was so slight as to be described by the patient as a stitch. Attrition sounds, synchronous with the heart's action, were often heard over the præcordial region; but extensive dulness on percussion was very rare. Traces of pericarditis were not very frequently met with after death; when they were seen they usually consisted of bands or patches of pale-coloured lymph, with or without a little dirty-coloured serum, in which a greyish lymph floated.

Pleuritis.—In a few cases, pleuritis was ushed in with acute pain, a full hard pulse, and high febrile excitement; and then auscultation and percussion revealed the existence of fluid sometimes extensively and rapidly effused. These were the exceptional cases; in general, the pulse was merely accelerated, there was no increase of fever, and

pain, although distinctly present, was slight and fugitive, such as is seen in the course of phthisis pulmonalis. In this class of cases, attrition sounds were frequently heard over different parts of the chest, but no extensive dulness was perceived on percussion. Thus the symptoms, in the great majority of instances, pointed out the nature of the attack as equally removed from acute idiopathic pleurisy, and from chronic pleurisy with effusion, many of the latter of which occur without pain.

In those few cases in which, during life-time, the symptoms of inflammation had run high, bright primrose-coloured lymph was found, after death, floating in turbid serum. In the great majority of cases, however, when lymph was thrown out it inclined to a grey colour, and the serum resembled whey, the membrane being semi-opaque, mottled, and sometimes thickened, just as is seen in cases of puerperal peritonitis. Often greyish dry bands or patches of lymph alone were seen.

Pneumonia.—The indications of the presence of pneumonia were in nearly every case faint. Heat of skin was not observed, nor were ferruginous-coloured sputa seen, but simply those general symptoms which might have arisen from slight bronchitis. Such being the insidious nature of the approaches of this disease, it not unfrequently happened that auscultation was either never employed, or at least not until some time after the invasion; and occasionally, owing to the nature of the accident, the patient could not be moved in such a manner as to afford access to the back part of the thorax, which was the most common seat of pneumonia. When, however, the ear was applied, rarely any moist rattles were heard, but dulness on percussion was perceived, often coming on very rapidly unpreceded by crepitant rattle.

On a *post-mortem* examination, pneumonia was hardly ever found to have passed the second stage, yellow softening being very seldom found. In general, the affected portion of the lung presented the dark-purple mottled appearance which is seen when pneumonia has come on during the course of another illness, being also often much drier than in acute primary pneumonia, indicating the preponderance of the plastic form of effusion. In one case only diffused gangrenous pneumonia was discovered, which came on after a cut throat. There was, therefore, a striking similarity, both in respect to symptoms and anatomical character, between the pneumonia which occurred in these cases and that which sets in during the progress of typhus fever.

Phthisis Pulmonalis.—I have elsewhere recorded a case in which phthisis pulmonalis came on in the acute form after a serious accident, and suffocated the patient, but it is the only one of the kind I have seen, and there were evidences of the previous existence of tubercular cachexia. Nor did I ever see a case commence after accident or operation in the laryngeal or the hæmoptoical form of invasion. In general, the disease made its first appearance either in the bronchitic or the latent congestive form; both of these, especially the latter, being slow in progress and asthenic in character.

After death, in some cases which had been protracted to an unusual length, semi-transparent grey matter was found in the lungs in small

sized masses, but more frequently in the form of granulations, in which the commencement of yellow tuberculisation was often apparent. In other cases, tubercular cavities were found; but the above-mentioned case is the only one in which the lungs were stuffed full of grey granulations and crude tubercles.

Purulent Deposit in the Lungs.—For some years I examined with great care every case in which there was cause for suspecting the existence of purulent deposits in the lungs. The only general signs which were *constantly* observed were profuse perspiration and hurried respiration, and when these both occurred, and no traces of any other pulmonary affection could be discovered, such as might account for the acceleration of the respiration, death ensued, and purulent deposits were discovered in the lungs. Now and then cooing or sub-crepitant rattles were heard, resulting, doubtless, from slight bronchitis, but there were no auscultatory signs constantly present, or in any way indicative of the presence of purulent deposits in the lungs. The pus deposited was invariably of a bright primrose colour. It should also be mentioned, that the patients for some time previous to their death were in a decidedly adynamic state, and the same was remarked by my late distinguished colleague, Mr. Hodgson.

It may be inferred from these observations on the symptoms and anatomical characters of chest diseases supervening on accidents and operations, that, in my experience, the great majority of them are of a decidedly adynamic nature. In this respect they resemble the diseases which follow parturition, and those which arise in the course of typhus fever. And it is natural that it should be so, because the system is reduced to a similar state in all these cases. In all a shock takes place, in one case produced by parturition, in another by the accident, and in the third by the action of poisonous miasma, while debility is frequently increased by great losses of blood. To this may be added the depression arising from the loss of out-door air and exercise, and the tendency to congestion of the internal organs induced by the recumbent posture.

The character also of these diseases resembles that of diseases of other parts of the body, which take place under similar circumstances, such as puerperal peritonitis, delirium tremens, occurring in constitutions broken down by intemperance, erythematous inflammations, and erysipelas; all of which, it is universally allowed, present an adynamic form. Indeed, I think, few would feel disposed to question the accuracy of the remark, that the greater number of the diseases of all kinds which supervene on severe accidents and operations present the adynamic form here insisted on.

Treatment.—It now only remains to endeavour to extract some practical rules for the *prevention* and *removal* of this class of diseases.

Prevention.—The time is not very remote when the preparation of the patient for important operations consisted of venesection, purging, and low diet; and if an operation, such as amputation, took place shortly after an accident, copious hæmorrhage from the vessels was rather encouraged than otherwise, with a view to prevent subsequent inflammation. Led, in some degree, by this ill-chosen word to regard the process it is used to denote, as a burning flame which could only

be extinguished or controlled by a lowering plan of treatment, and not having carefully studied its leading phenomena, the surgeon could have been little aware that the great majority of inflammatory attacks were of a passive asthenic nature, such as has been seen to be the case in the class of diseases under consideration. It may be contended that such a line of preparatory treatment, although not calculated to prevent the occurrence of these particular diseases, is well adapted to preserve in a healthy state the wounds caused by accidents or operations, and to make them heal favorably. This is a point which I do not feel myself competent to decide, but the authority of some of the most eminent surgeons attests that this lowering treatment is not only unnecessary, but hurtful, and that, in fact, wounds much more frequently present an unhealthy appearance from the system being too low, than from its being in an opposite state. It has, indeed, been remarked by some of large experience, that the longer they have lived the more careful have they become to husband every drop of blood at an operation. It follows, therefore, that the treatment best suited to ward off secondary chest affections, is such as is calculated to preserve the health at its full average standard; bloodletting being only employed when there is a considerable tension of the vessels, and then in a very guarded manner; giving the preference to local over general depletion, and using every effort to prevent unnecessary loss of blood from wounded vessels; purgatives being only administered for the purpose of gently relieving the bowels, and preventing or removing congestion of the abdominal viscera; the patients having been lodged in large, well-ventilated, and thinly inhabited apartments, and placed on a light, nutritious diet, embracing an amount of stimulant drink proportioned to their previous habits, so that a healthy blood plasma may be formed with little effort of the digestive organs. The chest also should be frequently and carefully examined for the purpose of detecting the earliest approaches of these diseases, some of which have been shown to be very insidious, and difficult of discovery, and also in order that the state of the vital forces may be ascertained from the strength of the heart's action, as indicated by the intensity of its systolic sound, so that in the event of any decrease in its power being detected, the period of collapse may be anticipated, as in typhus fever and ammonia, wine or quinine, may be administered without waiting for those outward manifestations which attend the further stages of exhaustion.

A modification, however, of this prophylactic treatment may be required when the nature of the accident is such as to lead to the fear that acute sthenic inflammation may speedily set in, such as meningitis after injury of the head, pleuritis after that of the thorax, or peritonitis after a wound of the abdomen. But even in these cases depletion is seldom called for, the preventive treatment consisting rather in the exhibition of mercury in some shape or other, with perhaps the application of leeches or the cupping-glass.

Now, if such be the appropriate treatment for warding off the inflammatory attacks here treated of, by so much the more it is adapted to prevent tubercular deposits taking place; for it is well established that an asthenic state of the system is that in which there is a peculiar

tendency either to the direct deposit of yellow tubercle, or to that of grey matter resembling the typhic deposit of Vogel in its histological character, and which, I have given reasons for believing, degenerates into yellow tubercle when the vital forces are at a low ebb, and when the metamorphosis of tissue is proportionately weakened.

Removal.—In the treatment of these diseases, when they have come on, we must, of course, bear in mind the facts just adverted to. Antimony is not so well borne as in primary pneumonia, even when in a typhoid form; but mercury and opium are our chief remedies, while ammonia, quinine, wine, &c., are freely given, so as to support the vital forces. Indeed I have frequently seen secondary pneumonia yield to opium and stimulants. So, too, secondary pleuritis and pericarditis will hardly ever require even local depletion, but will be best met by mercurial and opiate frictions, the system being at the same time well sustained. It would be useless to touch on the treatment of phthisis occurring under these circumstances, as no material alteration in the usual tonic and sedative treatment is called for. It would be equally useless to propose remedies for purulent deposits in the lungs, because whenever the symptoms have been so well marked as to lead to a strong belief that they had taken place, the cases in my experience have all terminated in death.

It is almost unnecessary to remark that the principles of treatment here shown to be applicable to this class of diseases supervening on accidents which have occurred to persons in good health must, *à fortiori*, be suitable when the subjects of such accidents were previously labouring under strumous cachexia, or any form of chronic disease.

It may by some be considered superfluous to have advocated these views at a time when they are held and taught by some of the most distinguished surgeons of the day. But, on the other hand, I venture to assert that there is a large number of practitioners in different parts of the country who do not adopt these views, or at least who carry them out too timidly in practice.

Surely, then, a subject of such practical and vital importance cannot be too often or too prominently brought before the notice of the profession, in order that the correct treatment may be firmly established and steadily pursued. The interests of the community demand the diffusion and general reception, no less than the discovery, of the truth; and my object will be fully answered if I shall have done anything towards extending views of the nature and treatment of these diseases, which I believe to be of much importance in practice.

ART. 40.—*Sources of the Intractability of Ulcers on the Leg, compared with those of other Regions.* By HENRY CHAPMAN, Esq., F.R.C.S.

(*Medical Times*, and *Gazette*, Feb. 7, 1852.)

Whatever may have been their origin, however various their aspect, the one feature by which ulcers of the lower extremity are distinguished from those of other parts of the body, is an inaptitude to heal under treatment which ordinarily proves successful in suppurating surfaces occurring elsewhere. There are manifold causes of this intractability,

some of them merely affecting ulcers on the leg in common with those of other regions, others which are peculiar to this locality; and more than one may be active, in different degrees of intensity, at the same time in the same individual case. The first point, therefore, to which our attention should be directed, in undertaking the management of one of these cases, is to ascertain, as nearly as we can, what is the predominating source of intractability at the time we are called upon to treat it; always bearing in mind that it is not sufficient simply to originate the reparative effort, by removing the prominent obstacle to granulation; means are still to be perseveringly employed which will sustain that process in full vigour until it terminates in sound cicatrisation.

They may be classed under two heads, those which spring from constitutional, and those which depend upon local causes; but we rarely find either class in operation singly; constitutional and local elements of intractability being mingled in nearly every case of chronic ulcer, the latter commonly outlasting the former, if they do not in most instances preponderate over them.

Constitutional sources of intractability comprise those morbid conditions of the system which exercise a pernicious influence over all local maladies; such as derangements of the digestive organs, of the secretory and excretory apparatus connected with them, and of the uterine functions; a feeble discharge of all the vital operations, whether it be the result of a cachectic habit of body, or of debility induced by other forms of disease; irritability of the nervous system, original or acquired. Any change, in short, which disturbs the general health, will produce a corresponding impression upon the ulcer; thus the whole of the newly-organised structure in a sore just cicatrised has been known to disappear in a few hours as a consequence of diarrhœa; mental anxiety will arrest the progress of a healing ulcer, and sudden changes of the weather often affect them powerfully.

Important as it undoubtedly is, that a due allowance should be made for such impediments to healthy action, they cannot be said to bear any exclusive reference to these affections, nor are they so uniformly present as to account satisfactorily for the obstinacy which so invariably characterises ulcers on the leg. Present or absent, moreover, a very simple experiment will suffice to indicate what is the true source of their peculiar intractability, the point in which we are chiefly interested. As long as the limb is maintained in the horizontal position, no very perceptible difference can be detected between a recent ulcer of the lower extremity and one situated elsewhere. But immediately the patient stands, or allows the foot to hang down, the surface and circumference of all but the most callous of these sores present a turgid, livid aspect; a copious exudation of serous discharge takes place, and, not unfrequently, a gush of blood from the overloaded vessels occurs; let the leg be raised to its former position, and a rapid alteration for the better is observed; the turgidity of the vessels disappears, and a hue more or less florid succeeds to the livid tint resulting from the dependent posture.

The *peculiar* intractability, then, of ulcers on the leg is clearly traceable to the dependent position of the lower extremity, which, by

impeding the free return of blood in the veins, places the capillaries of the ulcer and its immediate neighbourhood, as well as the nerves associated with them in that function, in an unfavorable condition for originating and carrying on the reparative process. If the case is left to nature, the stage of inactivity hence arising may be prolonged almost indefinitely, exposing the sore, in the meantime, to morbid actions which may totally change its aspect. To the atonic character naturally impressed upon an ulcer by its locality will thus be superadded inflammatory, irritable, or callous features, which, being regarded as characteristic of distinct varieties of the complaint, have been laid hold of as grounds of classification; and, as the epithets themselves lead to practical distinctions in the treatment, they, and the classification founded upon the conditions they express, are retained by almost all writers on the subject. Inflammation, however, is not so much a distinctive feature of any one class of these sores as an accident to which they are all liable, in common with those of other regions; so that, in adopting the above arrangement, on further consideration, inflammatory sores, as a class, should be omitted, and ulcers on the leg treated under the heads of *Indolence*, *Irritability*, and *Callousness*, with or without the complication of Varix. But the presence of the last two features must never be allowed to divert our attention from the first, since they are but of secondary importance in comparison with it; the disposition to indolence being a permanent source of intractability, upon which they are, if it may be so termed, merely engrafted. To the state of the capillary circulation, therefore, we must chiefly look, not only for an explanation of the local intractability peculiar to these cases, but also for indications of the means by which it may best be overcome.

Art. 41.—*On Spasm of the Stump after Amputation, with a case.* By Mr. Hancock.

(*Lancet*, March 20, 1852.)

When the considerable number of amputations which are performed in public and private practice is considered, it might in some degree appear surprising that so few cases of painful stump come before the profession. What, in fact, becomes of the divided extremities of the nerves in the great majority of amputations? They must certainly experience some compression by the formation of the cicatrix, and yet the greater number of stumps are painless, and very useful; whilst it is to that very compression and irritation that the rare cases of pain and convulsive movements are attributed. The more or less bulbous state of the extremity of the divided nerves has no doubt some influence on the development of unpleasant symptoms; but it must be recollected that nerves are almost always found bulbous in perfectly healthy stumps. Must we seek the explanation of the abnormal state of parts alluded to, in the patient's temperament; or in the peculiar manner in which the bulbs may be incorporated with the bone and muscles; or in the size of the bulbous extremities? It is perhaps to a combination of these three causes that the distressing symptoms which

have been recorded may be ascribed; but it may be presumed that the first of these causes—viz., the patient's peculiarity of temperament—has the greatest influence on the phenomena, especially where, besides pain, convulsive movements of the stump are manifested.

Of the few patients who have suffered in the manner last mentioned, the larger number were women, and these almost always of a more or less hysterical temperament. But it is nevertheless true, that cases have been recorded in which the pain in the stump and the spasms, excited hysterical attacks which had never been developed before.

This affection is so distressing, and so little under the control of remedies, that surgeons have been at great pains to ascertain the exact nature of the neuromata or nerve bulbs which sometimes follow amputation, in the hope that that knowledge might lead the way to a method of avoiding their formation. It has been found that the bulbs are not composed of nervous filaments, but that the bulk is made up of exudation matter, distributed among the fibrillæ of the nerves; and there are few stumps which do not contain some of these bulbs. But it is probable, that when they increase beyond a certain size, and are compressed by a hard cicatrix, they excite the pain and convulsive movements which are sometimes noticed. If this be true, a second amputation offers a good chance of freeing the patient from these symptoms; but herein we do not always succeed, as will be seen by the case lately under Mr. Hancock's care.

Nor are there examples wanting to show that there may be, in certain subjects, such a confirmed propensity to this kind of neuritis, that the affection will spring up again and again, though the bulbous extremities may be removed, or even the whole stump taken off at the joint. In fact, pain and convulsive movements may occur without the formation of bulbs, the symptoms probably depending on the more or less nervous inflammation which attends the process of cicatrisation. On this head, Mr. Miller says, very justly: "In the case of neuralgia apparently dependent on neuromata, these may be taken away by incision, and the wound treated most carefully, yet the same painful feelings are very prone to return before fresh neuromata have had time to form; and may continue, even when careful manipulation satisfies the surgeon that additional neuromata have actually not been produced." This will be very strikingly illustrated by the following case, which for several months excited a lively interest at the hospital. From notes taken by Mr. Dalton, the house surgeon, we become acquainted with the following facts:

Ann V—, æt. 29, of fair complexion, blue and somewhat wild-looking eyes, was admitted April 10, 1851, under the care of Mr. Hancock. She is evidently of a highly nervous and excitable temperament; has generally attended to household duties, without any fixed occupation, and seems to be affected with the peculiar hysterical tendency of exciting as much as possible the attention and sympathy of those with whom she comes in contact. The left arm has been amputated at about the middle point between the head of the humerus and the condyles, and the stump is constantly and convulsively moving, principally in a direction from above downwards. The pectoral muscles, the trapezius, the scaleni, and the platysma myoides, are also

strongly agitated, and the parts are never at rest except when the patient is asleep.

She states that she was seized, about sixteen years ago, with severe pain and inflammation of the elbow-joint, (without having met with any injury,) and soon after, a rather serious illness, probably continued or other fever. For these symptoms she was actively treated; but becoming worse, she repaired to town, and placed herself under the care of the late Mr. Morgan, at Guy's Hospital. Here the usual means employed for diseases of joints were carefully used, but to no purpose; and Mr. Morgan was at last obliged to take off the arm—a period of five years having elapsed between the first onset of the articular disease and this amputation. The patient returned to the country before the stump was completely cicatrised; the healing process was completed in about two months, and a firm cicatrix formed.

At the expiration of three months after the operation, and one after the entire closure of the wound, the stump began to move convulsively, most of the muscles of the shoulder and neck connected with the arm soon partaking of the spasmodic twitchings. This had been preceded for several days by very intense pain in the extremity of the stump. Soon afterwards, a collection of matter occurred in the part, and she was then several times seen by the late Mr. Aston Key at St. Alban's, who recommended her to return to Guy's Hospital. She now stayed in that institution for several months, during which, blisters, setons, issues, ointments of various kinds, and general treatment, were tried with great perseverance, but without any relief to the convulsive action or to the pain. Among the means employed, was the tying down of the stump; but when the latter was well secured, and the movements completely prevented, the *whole body* used to be thrown into convulsions. The pain would sometimes radiate from the stump to the neck, back of the head, and down the spine, and convulsions occasionally were noticed in the left thigh, leg, and great toe. Even the right shoulder shook now and then violently, and became exquisitely painful. She often woke suddenly, and found both the left leg and the stump in violent convulsions, but the movements used mostly to cease during sleep. The patient, however, stated that she had often been told that the stump, even when she was sound asleep, would start occasionally. It was likewise noticed that, at the height of the convulsive action the skin and cellular tissue of the cicatrix became violently retracted.

Some time after leaving Guy's the patient was admitted into St. George's Hospital, where the series of remedies available and sometimes efficacious in such cases, were successively tried, but as none gave any relief, amputation at the shoulder-joint was mentioned, and agreed upon, two years having elapsed since the removal of the arm. But at this time a new feature arose in the patient's case; severe epileptic fits set in, which occurred more or less frequently for the space of two years after she had left St. George's.

We now find that the girl fell into the hands of a mesmerist, and she states that the convulsive action generally stopped during the artificial sleep. After this, the patient suffered so much pain and

inconvenience, that she applied for admission at St. Bartholomew's Hospital, where she stayed about nine months. The best directed means were here again perfectly useless; the amputation at the shoulder-joint was proposed, but she seems to have been at that time unwilling to submit to this last resource. At St. Thomas's Hospital, whither the patient next repaired, Mr. Green and Mr. Travers were of opinion that there was no chance of any relief but by removal at the joint. Some incisions were here made into the stump, but she left without consenting to the operation proposed.

Frequent blisters were subsequently applied to the part, as well as to the spine; galvanism was tried, but all to no purpose. The violence of the fits would sometimes abate considerably, and then she improved in health. She has always exhibited signs of indolence, and within the twelvemonth which preceded her admission into Charing-cross Hospital she gained much flesh.

The patient has amused herself in casting up the number of some of the remedies which were used in the different institutions where she was admitted, and finds that the stump was lanced twenty-five times, that she had 495 leeches, ninety-six blisters, &c. It should be particularly noticed that during all these years, the catamenia (which had begun at eleven) were always very regular.

Mr. Hancock endeavoured at first to give tone to the system, and to overcome the hysterical and nervous state of the patient. For this purpose, the most approved means, as quinine, steel, zinc, morphia, &c., &c., were used for a considerable period, but without any very tangible effect. It was clear, after several months had elapsed, that a more direct interference would be required to subdue the convulsive action of the stump. There could be hardly any doubt but that the bulbs of the nerves were much enlarged, and that their great size would ever be in the way of a cure; Mr. Hancock therefore resolved, before having recourse to the complete removal of the stump, to dissect out the bulbous extremities of the nerves.

On the 22d of August, 1851, whilst the patient was under the influence of chloroform, Mr. Hancock made a longitudinal incision, from the shoulder downwards along the anterior aspect of the stump. When the parts were fairly laid open, a bulbous mass, about the size of the last phalanx of the thumb, came into view. This was carefully freed from the surrounding parts down to the bone, and removed. During the operation the brachial artery was divided, and immediately tied; the lips of the wound were brought together, and when the stump was placed upon the pillow it was observed that the spasmodic movements had entirely ceased. This circumstance was extremely satisfactory, and confirmed the belief that the presence of the nervous bulbs had been mainly instrumental in the persistence of the symptoms through so many years.

This favorable state of things lasted about one month; the stump lay perfectly still, and hopes were entertained that this very obstinate affection was at last conquered; but the patient, having been seized by a fit of impatience, about four weeks after the last-mentioned operation, the stump began again to be convulsed, and matters soon became as bad as ever. It was now evident that nothing short of

amputation at the shoulder-joint would be of any avail. Mr. Hancock therefore proposed the operation to the girl, who readily consented. On the 12th of November, 1851, the patient having been narcotised with chloroform, Mr. Hancock performed amputation at the joint, making a good flap of the deltoid muscle. It was noticed that the stump, when severed from the body and placed on the table, continued to be convulsively agitated for several minutes. No pathological appearance of importance was revealed by the examination of the stump, except that the nervous trunks were closely adherent to the bone.

The chloroform affected the patient to a very great degree for about twenty-four hours after the operation, the hysterical diathesis having a large share in the somewhat alarming symptoms which were observed. This doubtful state did not, however, last long; the patient progressed very favorably for several weeks, and it might now be fairly surmised that all the pain and inconvenience which had been undergone for so many years were arrested; but hardly had the cicatrix formed, about two months after the operation, when the muscular fibres forming the deltoid, those of the trapezius, the scaleni, a portion of the great pectoral, and even the platysma myoides, were again thrown into strong convulsive action. The movements were just as continuous and spasmodic as they had been in the stump. When the girl was not observed, the jerking was much less rapid than when she was either angry or excited. Some suspicion had previously existed, and was now made somewhat strong, that the movements were, perhaps, not completely involuntary. Mr. Hancock thought it now prudent to allow the girl to breathe the country air; she was therefore discharged, February 15th, 1852, about ten months after her admission.

Art. 42.—*On certain Morbid States of the Corpus Cavernosum Penis.* By Henry James Johnson, Esq.

(*Lancet*, Dec. 20, 1851.)

The several conditions alluded to in this communication are:

1. Partial loss of elasticity in the wall of the cavernous body.
2. Circumscribed abscess in the cavernous body.
3. Secondary suppuration in the cavernous body.
4. Torsion of the cavernous body, from burrowing phagedæna.

All these affections, except the third, have fallen under the author's observation. The third he quotes from rather vague recollection. In addition to these, there is a varicose enlargement of the cells of the cavernous body, the subject of which he has not seen, although he is aware of the particulars. The patient was brought to him by Mr. Gilbert, the ingenious inventor of the fulcrum chair for facilitating the extraction of teeth; but the author happened to be out of town at the time, and he consulted Mr. Bransby Cooper. Mr. Johnson says he will probably have an opportunity of making an examination of the case, when he will be enabled to report it.

[The author proceeds to describe these morbid states, in the order in which they are enumerated.]

1. *Partial Loss of Elasticity in the Wall of the Cavernous Body.*—From what I have seen, I am disposed to believe that this affection is not so rare as chronic inflammation of the cavernous body. The subject of it is more or less advanced in life—has generally been addicted to sexual indulgences, at all events in earlier years—has laboured under gout, or has gouty tophi, or presents some other overt indications of the gouty habit—but has not, of necessity, suffered particularly, or indeed at all, from gonorrhœa or syphilis.

The characters of the complaint are simple. In erection the penis is unnaturally curved, and commonly towards the abdomen. The distortion is not such as to prevent connection, though it cannot, of course, facilitate it. There is little uneasiness, nor any one painful spot, nor can morbid thickening, nor any *distinct* alteration of structure, be detected by examination with the finger. This condition of the part steals on insensibly, and, wherever I have observed it, has been permanent. I do not know that it becomes worse than what I have delineated; but candour also obliges me to add, that I am in equal ignorance of its becoming better. If, however, it depends, as I believe that in a great degree it does, on a gouty habit of body, there is reason to suspect, from what that constitutional taint effects in other organs, that it *might* be seriously aggravated.

As no opportunity has occurred to me of making an examination, in a case of this kind, after death, I cannot speak to the exact state of the cavernous body. But the partial loss of elasticity is equally palpable and positive; and the absence of tangible alteration of the tissue compels the conclusion that, whatever the change, it is too slight and too molecular to be susceptible of manual appreciation.

When direct evidence fails, we frequently derive, in medical as in other philosophical inquiries, material assistance from analogy. I know that in argument it is a dangerous instrument, and as often perverts truth as discloses it. But I think it may fairly be invoked here. The derma of the skin is essentially a fibrous web, supporting the vascular and nervous organization, the sudatory apparatus, and the hair-bulbs. In the gouty diathesis, and in advanced years, there is a marked tendency to partial rigidity of that tissue, followed by induration and deposit in it. I do not speak of actual concretions containing the lithate of soda, "tophi" which are found in the skin and under it, but of a simpler and a common form of induration of the derma. Whoever has seen much of gouty dyspepsia has constantly met with this. It occurs at the tips of the fingers, at their flexures, opposite the phalangeal joints, in the palm of the hand, in similar situations in the foot; in aggravated cases, tophi form; and it is not very unfrequently combined with chronic inflammation of the palmar fascia, or of the sheaths of the flexor tendons.

I conceive that this affection of the derma affords a sort of key to that of the cavernous body: both occur in the same diathesis, at the same age, and in the same circumstances. The essential cause of both is probably a slow, slight, and gouty form of inflammation, whose first effect is to impair the natural elasticity of the tissue, whose subsequent operation is to produce deposits in it. In the cavernous body I have not hitherto witnessed *them*, but what is *my*

experience? This is speculation, but whether it be true or false the facts are worth recording.

There is no great encouragement to talk of treatment where none has proved of material service. But this consideration may have some weight:—local diseases produced by a constitutional vice have a *progressive* tendency. This follows, *ex necessitate rei*, both in logic and in fact. If, from topical or other causes, we are unable to remove the mischief that has occurred, we may possibly prevent that future and that greater mischief, which, without our interference, would occur. And this, I apprehend, we may reasonably hope for in the present instance. For if the gouty habit is the cause of the condition of the corpus cavernosum, against that habit our remedies must be directed; and although we cannot re-cast a constitution, nor metamorphose a diathesis, I know of few complaints, of equal magnitude, which admit of greater palliation than gouty indigestion.

2. *Circumscribed Abscess of the Cavernous Body.*—In consequence of its proximity to the surface, in the perinæum, the spongy body is more exposed than the cavernous to external injury. The sources of this may of course be various, but the ordinary accident occurs on horseback, from the rider being thrown with suddenness and violence on the pommel or the crupper of the saddle. Contusion of the integument, of the cellular tissue, of the erectile structure of the corpus spongiosum, and of the urethral mucous membrane; laceration of the latter, with consequent effusion of the urine; inflammation and suppuration, more or less considerable and extended; a bad form of stricture; or urethral fistula, are consequences which would naturally be likely to ensue, and which, in point of fact, are met with.

In fracture of the body of the pubic bones, or of the symphysis pubis, the urethra, or even the bladder, may be torn, and such an accident is not very rare. The cavernous body in general escapes, unless the ascending ramus of the ischium is involved, when the branch of the corpus cavernosum attached to it will very probably be lacerated.

I refer to these facts, with which the surgeon is familiar, in order to introduce the only case which has occurred to me, of injury restricted to this structure.

In the month of June, 1847, a gentleman, thirty-two years of age, was riding a spirited horse in the Park, when the animal shied, and very nearly dismounted him. In consequence of the friction of the saddle, he had a partial erection at the time, and he experienced, in the struggle to preserve his seat, an acute pain near the pubes, where he imagined that he bruised the part. He returned slowly home, and in the evening requested my attendance.

I found the penis swollen and contused, but was unable to determine whether the tumefaction was confined to the sub-cutaneous cellular tissue. There was tenderness on pressure, extending down on the right side to the perinæum, and involving the right testis and the cord. There was also pain in the lumbar region, occasioned, I presumed, by the state of the spermatic nerves.

I directed the gentleman to repose upon the sofa, to apply evaporating saturnine lotions, and to take some saline and aperient medicine.

When I saw him next day, he was in no small alarm, from the increase of swelling of the penis and the scrotum, both of which had become so black that he imagined they were mortifying. Of course this was nothing more than ecchymosis, the amount of which showed that a vessel of some size was lacerated.

Ten days had elapsed before the general tumefaction subsided to any material extent. When it did so, it was evident that an unusual fulness obtained in the right section of the corpus cavernosum, contiguous to the pubic arch. That fulness was rather circumscribed than otherwise, and was the seat of tenderness on pressure, while a lancinating pain was felt in it occasionally, and a vague sense of tension always. In erection, the penis inclined to the right, with a very obvious torsion, and the act was attended with so much suffering as to be dreaded by the patient.

The treatment consisted of salines, purgatives, opium at night, leeches to the penis, and fomentations with poultices. These were infinitely more agreeable than the cold applications that I had begun with, and as I soon arrived at the conclusion that suppuration was occurring, I adopted, of course, every means to expedite it.

That suppuration was palpably in the substance of the cavernous body. The integument, it is true, was red, and the cellular tissue gorged, but the swelling was œdematous, not purulent, and was evidently symptomatic of inflammation deeper.

Another week passed without any further alteration than an unequivocal increase of pain and a more defined boundary to the enlargement. Although there was no distinct fluctuation, there was that sense of elasticity communicated by fluid beneath fasciæ, or in cysts with firm parietes. The patient was of an irritable and gouty habit, and bore his annoyances indifferently; but there was little fever or other constitutional disturbance.

It was now evident that the abscess was assuming a circumscribed form, and would probably become a chronic one. The density and strength of the wall of the cavernous body would naturally render it extremely tedious, and the thickening likely, indeed certain to occur around the purulent collection, would, perhaps, be worse than the abscess itself in its ultimate effects upon the organ. These considerations determined me to make a free and an immediate opening. I did so. The resistance of the fibrous membrane to the lancet was considerable, but when punctured, its elasticity forced out a couple of drachms of pus with such rapidity as to display the great amount of previous tension.

To avoid prolixity, I shall content myself with stating, that on the third day the gentleman was attacked with synovial inflammation of the left knee, which required leeches and blisters; that the abscess in the cavernous body did not close before the middle of August; that some thickening in its site remained until the end of November, when my own illness compelled me to leave England; that whilst the patient was under my care there was still some distortion of the penis in erection; that this distortion was progressively diminishing, *pari passu* with the thickening; and, finally, that there was no pain, nor scarcely any inconvenience, whatever the condition of the organ.

Although I am unable to say positively that its natural structure is restored, I have no doubt that it is so.

3. *Secondary Suppuration in the Corpus Cavernosum.* Although I do not consider it proved that secondary inflammation of the serous membranes, and secondary depositions of pus, after operations and injuries, are always dependent on phlebitis, or connected with it, I do conceive it sufficiently established, that these affections are owing to purulent absorption. That absorption is often due, no doubt, to inflammation of the veins; but it probably results, more often still, from the mere introduction of pus into the blood, through the medium of the veins or the lymphatics.

Whatever opinions may be entertained on this point, there can be no dispute on the nature of the organ in which these deposits of matter are most frequent. The tissue that they preferentially affect is one in which the venous element predominates. We usually find them in the lungs; they are far from rare in the liver; they are occasionally seen in the cranial and in the vertebral sinuses; and, after amputations more particularly, they are detected in the osseous cancelli. No doubt they are also not uncommon in the subcutaneous cellular tissue; they are witnessed in the synovial cavities, and they are frequent enough in the serous membranes. But in the latter case it will usually be noticed that the pulmonary or the hepatic structure has been first involved, and that the serous inflammation follows, as it naturally would; while deposits confined to the cellular tissue and the joints are rare in comparison with those discovered in the lungs. On the whole, then, we may accept it as a fact, subject, unquestionably, to exceptions, that the lungs and liver, but especially the lungs, are most liable to this affection.*

The erectile tissue of the cavernous body is essentially of venous composition. It should, therefore, *à priori*, be prone to whatever morbid states the venous system is disposed to. In this instance, however, the theoretical consideration is not, so far as I am aware, borne out by facts. I have examined, and have seen examined, a large number of secondary deposits at the hospital, but have never met with any in the corpus cavernosum.

The only case with which I am acquainted occurred about fifteen years ago, in one of the Parisian hospitals. I read it at the time in one of the French journals, I rather think the 'Archives.' My recollection of the particulars is too imperfect to allow me to do more than refer to them in the most cursory manner.

The patient suffered from stricture of the urethra. The attempt to introduce an instrument was attended with much difficulty, and appeared to have occasioned some injury to the canal. Rigors, and the other ordinary indications of laceration of the mucous membrane followed. But they did not pass away as they usually do, the symptoms of secondary purulent formations supervening. The patient died. On examination of the body, deposits of matter were found, I

* It is not easy to explain on this, nor indeed on any other hypothesis, why the spleen and kidneys, and in particular the spleen, escape, as they generally do. These organs would seem to have a better claim to deposits of matter from the blood, than the cellular texture or the joints.

believe, in the lungs; concrete pus was contained in the cavity of the pelvis, and two or three small, but distinct collections had formed in the substance of the cavernous body. These were unconnected with the stricture, as well as with the false passage. The report was silent, or my memory is so, with reference to the existence of phlebitis.

4. *Torsion of the Corpus Cavernosum from Burrowing Phagedæna.* —Perhaps I may be considered impertinent for remarking, that the delicate skin which invests the penis, and constitutes in front the outer layer of the prepuce, arriving at its free edge, turns inwards, and merges insensibly in mucous membrane; that this mucous membrane having formed the inner layer of the prepuce, is closely connected with the corpus cavernosum, prior to reaching the corona, where it is continuous with the mucous membrane of the glans,* and that the cellular tissue, which connects the integument to the cavernous and the spongy bodies, which separates the two layers of the prepuce, and ties down the post-coronal mucous membrane, is remarkable for its tenuity, the absence of adeps, and the patency of its areolæ. Whatever fluid enters it, runs through it without hindrance; and inflammatory or other morbid action being once set up in it, is very liable to spread. It is almost superfluous to cite the familiar instances of emphysema, anasarca, erysipelas, and urinary infiltration.

A common, perhaps the most common, site of venereal sores, is at or about the angle which the mucous membrane forms, in quitting the cavernous body to become the inner prepuce. Here its corium, extremely thin, offers a slight barrier to the ulcerative process, and should the badness of the constitution, or the treatment, set up phagedæna, it may penetrate the loose cellular tissue, and burrow between the corpus cavernosum and the skin.

In those "good times" (we can hardly call them "old," for they were but yesterday, and I am not sure that they have lost all claim to being considered to-day,) when salivation was looked on as *the* antidote to syphilis, and the spitting-pot was as necessary an appurtenance to a patient as any other indispensable utensil; when a ward was appropriated, in the Lock Hospital, to mercurial erythismus, and it seemed the most natural thing in the world that a patient should drop dead in putting his spoon to his mouth; when, instead of the exanthematous rash and the psoriasis discreta, which now constitute the mild and staple forms of secondary symptoms, and are termed by some of the ancient school, "syphilis badly cured," we had desquamating and ulcerating tubercles, the varioloid eruption, rupia, serpiginous cutaneous sores, sloughing throat, nodes, caries, exfoliations, faces without noses, mouths without palates, a life of wretchedness, and not unfrequently a death of Lazarus, the ideal, I suppose, of "syphilis *well*

* The characters of mucous membrane are displayed in the direct ratio of the length of prepuce, and of the exclusion of the atmosphere. When the fore-skin is short, and the glans denuded, the epithelium thickens from exposure, and assumes the type of cuticle. We see the same thing, in a marked degree, in prolapsus of the rectum and vagina. Nor need this excite the least surprise, for mucous membrane is only internal skin, and skin external mucous membrane. The anatomical elements, *consideratis considerandis*, are the same in both—their functions similar—and their characters vicarious.

cured"—in those good times, phagedæna, in the situation I have alluded to, was common, and received, if my memory does not play me false, the name of "the dissecting sore."

SECT. III.—NATURE AND TREATMENT OF SURGICAL DISEASES.

ART. 43.—*Urate of Ammonia as an External Application in Synovial Inflammation of the Joints.* By W. HORNER, M.D., Pennsylvania.

(*Philadelphia Medical Examiner*, Feb. 1852.)

[The author's acquaintance with the valuable counter-irritant properties of urate of ammonia was accidental. He had a patient who, dissatisfied with his applications, used one of her own to an inflamed joint, which consisted of a mixture of human urine and potter's clay applied as a poultice. This nasty application having relieved the pain in a few hours, the author was tempted to experiment with it in other cases, substituting a guano poultice for the original. He says:]

Having a similar case shortly afterwards, in the St. Joseph's Hospital, I tried it in a solution of muriate of ammonia formed into a poultice. No very distinct or satisfactory result followed, and it was discontinued. Having the idea still in my mind, and wishing to be satisfied about it, but reluctant to employ the article resorted to by the poor woman, I determined to find my urate of ammonia in some other form of an easy kind, and for that reason adopted the guano, which has so large a proportion of phospate of lime, urea, and urate of ammonia in it. A female patient, æt. 34, Mrs. C—, from Tamaqua in this State, who had for more than a year laboured under inflammation of the right knee, was put under my charge at the St. Joseph's Hospital, October 8, 1851. She had been well attended to by Dr. Scherner, who had conducted her through the most acute period of her complaint. The joint had suppurated, and she came to town with a small fistulous orifice, on the inner side of the knee, through which a probe could be easily passed between the tibia and os femoris. From this there came daily a spoonful or more of matter, when a plug was withdrawn from the orifice. She still suffered great pain at night, the part was tender, and was in continual uneasiness, and she had some slight fever in the afternoon. Here was exactly the case to try the efficacy of urate of ammonia, as naturally formed in animals. I accordingly obtained some guano, and had it made into a hot poultice with clay. The joint was kept enveloped in the poultice, with frequent changes, for nearly the remainder of the month, at the end of which time a very marked improvement had taken place in the amount of pain, and also in the degree of swelling, and the purulent discharge had almost ceased,

The application produced a very copious vesication of the knee, and

it had to be weakened to reduce the caustic qualities. Having conducted this treatment as far as seemed necessary, the skin was permitted to heal. Some little pain recurring afterwards, she was blistered for it; that getting well the emplastrum calefaciens was applied, and the leg was also kept supported by an extending band on the ankle, and a counter-extending one on the thigh, their action being sustained by a splint on the outside of the limb. At the end of six weeks (November 25) she has left the hospital without pain or uneasiness in the knee. The joint is in a state of false anchylosis, and straight. I have covered the knee with emplastrum adhesivum, and secured it in that position with strong pasteboard splints, moulded to the knee, and have recommended her to keep it so for two or three months, until all danger of secondary suppuration be removed. Probably at the end of this time the judicious use of frictions and of Stromeyer's screw splint may impart some flexion to the limb.

The hospital record sheet shows the following details of dates, which may be inserted in this place:—October 9th. Poultice of guano (urate of ammonia) and potter's clay, equal parts. 10th. Poultice has blistered. It was discontinued, and simple cerate applied. 11th. Patient has less pain; soreness of knee reduced, and not so much swelling. A poultice with one third of the urate of ammonia and two thirds potter's clay. 13th. Vesication. 14th. Quantity of urate reduced to one fourth of poultice, treatment continued pretty much in this state to near the end of the month. Vesication by emplast. cantharid. about this time, but omitted on record. 28th. She was permitted to eat as she pleased.

November 5th. Emplastrum calefaciens. 12th. Discontinue emplastrum calefaciens, and reapply the urate of ammonia as on the 14th of October.

While this case was in progress another occurred in a boy who had the knee-joint opened by a cut of half an inch or so in length. Synovial inflammation followed, with the ordinary symptoms. Its usual acute period was passed through, under the depletory antiphlogistic treatment, and with evaporating lotions to the part. The disposition to fall into the chronic state, attended with tumefaction, was relieved by five days' use of the same argillacious, uro-ammoniacal poultice. The ward sheet exhibits the following entries in regard to this case:—Patient, Timothy Roach, æt. 19, admitted September 23d, a day or two after accident; knee painful and stiff, somewhat swollen; rest and fomentations of warm water directed on that day; also loss of ten ounces of blood from arm. 24th. Local bleeding by scarified cupping; fomentations continued.

October 4th. Warm fomentations to this date; in the meantime an evident articular effusion has occurred into the synovial membrane of the knee; a blister plaster, four inches by four, was then applied. 6th. Blister plaster two inches by three. 7th. The patient so much relieved from pain as to be permitted to leave his bed and promenade with a crutch. 9th. Some aching and tumefaction indicated a persistence of articular irritation. The poultice of urate of ammonia (guano) one fourth, potter's clay three fourths, was then applied hot, with frequent renewals to the 14th of October, at which

time all the symptoms were relieved. The patient was discharged cured on the 15th.

The above cases are reported much in outline. I shall continue, as opportunity offers, to test the value of the above remedy, and also compare its results with other remedies. It appears to me to have some special qualities, which are of a highly beneficial kind in the affections alluded to. It is so active a revulsive when applied strong, that I have no doubt of there being many cases of serous inflammation in which it may be usefully resorted to. I would here suggest a trial in puerperal peritonitis and in pleurisy. I see no objection except the odour. The poultice of guano and clay dries very quickly, so that it is better to shield it with oiled silk or India rubber cloth. The clay I look upon as simply a vehicle, but it may also have some physiological action from its physical properties in regard to moisture. The analysis of the best guano by the chemist presents the following constituents, which are mentioned here for facility of reference. The proportions will vary according to their atmospheric exposure and to the degree of adulteration in trade. As it is an expensive article for agricultural purposes, it has become common to reduce its chemical relations by the addition of common earthy substances:—Uric acid, thirty per cent.; uric acid with ammonia; carbonate of ammonia; muriate, oxalate and phosphate of ammonia; free ammonia; phosphate of soda; phosphate of lime; sulphate of potash and soda, and oxalate of lime. It is the large quantity of ammonia in it which makes it so active a stimulant to vegetable growth, and so disagreeable to the smell. It, however, is not so intolerable medically as assafœtida, an article which we have but little hesitation in prescribing.

Art. 44.—*Treatment of Ununited Fracture of the Patella.* By M. Bonnet.

(*Revue Médico-Chirurgicale*, Nov. 1851.)

Fractures of the patella sometimes fail in becoming consolidated, but are united by ligamentous tissue, which is incompetent to sustain the necessary movements of the knee-joint. A case of this kind is recorded by M. Bonnet, in which he obtained bony union by a peculiar process, which, together with section of the triceps muscle, is thus narrated:

The subject of this case was a vigorous man, aged 44, who had been treated for fracture of the patella in the usual manner, without inducing consolidation. He therefore entered the Hotel Dieu of Lyons, under the care of M. Bonnet, who considered that some amelioration, at least, might be accomplished by section of the triceps, and after scarifying the ends of the bones, keeping them in contact by clamps, as suggested by M. Malgaigne.

Accordingly, M. Bonnet commenced by subcutaneous section of the triceps, a few lines above the upper fragment. This allowed the descent of the fragment, which, together with the lower portion of the bone, was scarified by two other subcutaneous punctures; and the limb was then placed in appropriate splints, with the heel elevated. For the first few days there was some swelling of the joint; but the

inflammation speedily subsided, and M. Bonnet proceeded to complete the operation by inserting small screws into each fragment, and causing these to be brought together, and retained in apposition by waxed thread. The screws are said to have remained forty days without producing any other unpleasant effects than some hydrarthrosis. The result was highly satisfactory, the fragments being brought nearly into apposition, and the uniting tissue being sufficiently resisting to allow of active use of the limb.

ART. 45.—*On the Treatment of Fractures in the vicinity of the Ankle-Joint; with Observations on the Practice of Tenotomy, as facilitating reduction of the Broken Bones.* By RICHARD G. H. BUTCHER, F.R.C.S.I.

(*Dublin Medical Press*, from *Dublin Quarterly Journal*, Feb. 1852.)

In the 'Dublin Quarterly Journal' of last month, there is a practical paper by Mr. Butcher, illustrative of the treatment of fractures in the vicinity of the ankle-joint. A number of instances are recorded, some of them of the most complex nature, yet by the treatment laid down, and the apparatus recommended, the "integrity of the limb and its normal functions were in every instance preserved to the sufferer." Space will not permit a lengthened detail of the several cases and their management, but the concluding observations on the practice of tenotomy in similar cases, we shall transcribe in the author's own words:

"One of my chief reasons for wishing to place these cases on record is the practice lately brought into requisition in London, in the management of the special fractures under consideration. I allude to *tenotomy*, the division of the extensor tendons, to facilitate reduction, as practised by Meynier, Bérard, Laugier, and other French and German surgeons. A lengthened discussion not long since took place before the Medical and Chirurgical Society of London, on the practice of tenotomy, in some cases of fracture, when Mr. C. De Morgan related some cases in illustration. In the first cited, the tendon was not divided until the day after the accident. 'The second case occurred in the author's own practice. The patient was a female, aged 66, of drunken habits, and was admitted into the Middlesex Hospital in March, 1849. She had been knocked down by a cab, and both bones of one leg were fractured a little above the ankle.' The report goes on to say:—'The author divided the tendo-Achillis on the ninth day, with instant relief to the suffering of the patient, and immediate removal of all untoward symptoms.' A very important feature in the management of these cases has been omitted altogether: the manipulation adopted for the reduction of the fracture, and the position in which the limb was placed afterwards. In the second case it is stated, that 'the tendon was divided on the ninth day.' I can easily understand that this might be requisite, if the fracture, with its attendant deformity, was left unreduced for that length of time; failure of the therapeutic means employed; and the spasmodic action of the extensor muscles thus prolonged; for if fractured bones be left unreduced for such a lengthened period as this, *permanent* spasm seizes on the muscles and becomes established; a fact clearly pointed out and insisted

on by Sir A. Cooper. Mr. De Morgan goes on to say:—'In the cases related, the chasm between the divided portions at first did *not* exceed a quarter of an inch, that being sufficient to get the bone into position; and in a short time after there was no appreciable space at all.' This admission goes still further to proclaim that there is no necessity for division of the tendon to effect reduction, if the case is seen early; for by flexing the thigh as I have recommended, we can relax the extensor muscles more than 'the quarter of an inch, that being sufficient to get the bone into position.' I am of opinion that in ninety-nine cases out of a hundred, there will be no necessity for division of the tendon to effect reduction, if the limb be treated as I have advised; nay, on the contrary, I think, in some instances, the division of the tendon would be very injurious, as removing the support posteriorly from the ends of the broken bones, and thus permitting displacement in that direction. The mode in which the fracture box which I have described, supports the leg in a horizontal line, with the thigh slightly flexed, padded, and cushioned, as illustrated by the foregoing cases, meets every requirement of the surgeon. Dupuytren's splint, in conjunction with these means, as used in some of my cases, is a most admirable adjunct; but, taken by itself, it will not answer as well for the management of the form of fracture under consideration; for if the limb be done up as directed by Dupuytren, and placed flexed upon its side, some lateral displacement will take place; or if, with the splint so applied, the leg be allowed to rest upon the heel, it is unsteady, and rolls about, and the entire limb is in the extended position—a posture very objectionable, as making tense the tendo-Achillis.

"From a review of these cases, and the observations upon them, the following facts are, I think, deducible:

"1st. That by proper position of the limb, and early reduction, coaptation of the broken fragments can be effected and spasm averted.

"2d. As the result of the broken bones being kept in accurate position, irritation is subdued, excess of callus prevented, and the motions of the joint left unimpaired; a fact of great practical importance here, for the experiments of M. Cruveilhier prove that various forms of irritation will make the periosteum ossify, and it has been ascertained that in some cases of fracture near the joints the ligaments have sometimes been converted into bone, and M. Rayer has observed, from numerous interesting experiments, that a similar change may be exerted not only in the fibrous but also in the cartilaginous structures.

"3d. That tenotomy is not called for in the vast majority of cases, being perhaps only admissible when permanent spasm has located in the extensor muscles, owing to neglect of early reduction."

ART. 46.—*On the Treatment of Hip-joint Disease by the Straight Splint.* By S. COOPER FORSTER, F.R.C.S., Surgeon to the Surrey Dispensary, &c.

(*Lancet*, Nov. 29, 1851.)

The author advocates a measure of great importance, first, as he informs us, introduced by Mr. Key, and in his own practice found eminently successful. The plan is not unattended with some little

trouble to the surgeon, and requires constant attendance and watching, and therefore perhaps a numerous class of patients will be frequently neglected, and a class indeed to whom it is of the greatest importance that a very serviceable leg should be obtained. From the author's experience amongst the poor, what with previous neglect and misapplication of remedial measures, or the total indifference of parents, many children and young lads are doomed to drag on either a miserable existence, a burden to themselves or families, or terminate their lives at a premature age; many cases of disease of the hip-joint in all its stages, are often neglected by the surgeon, from a belief that little can be done except place the patient in a recumbent posture, with perhaps a pillow or so beneath his knee. Now besides the simple horizontal posture, the author believes the greatest amount of good may be accomplished by also applying such local measures as will ensure the patient a useful member, after the subsidence of the inflammatory symptoms, and not supposing that nature dictates the proper position in which the limb should be placed for future use, though she undoubtedly fixes it in the most comfortable posture for the present. For example, he remarks, no one can believe that the bent position is the most useful one for an anchylosed knee-joint, nor indeed is it, as far as his experience goes, the most useful for the hip-joint, whether perfectly fixed or not; and yet it is the position which all the cases of disease of the hip-joint would acquire if left to nature; and, indeed, two joints become contracted, inasmuch as the knee always is flexed likewise; and no one can doubt that the straight would be most useful. The treatment the author advocates is not by any means easily applied in what is called the third stage of the disease, where suppuration is established, and an opening or openings formed; but as it is more common to see this complaint in the first two stages, and in either of them the straight position is with very little trouble obtained, the treatment is of course most applicable at those times.

The object the author has especially in view, by the plan of treatment with the straight splint, are as follows:

1st. To relieve pain by obtaining the most perfect rest.

2d. To prevent abscess forming, or if matter has formed, to determine the point at which it shall come to the surface.

3d. The greatest advantage, and the one to which he more particularly wishes to draw the attention of the profession, is the future usefulness of the member.

Rest, he observes, is of course the first thing to be sought for in an inflamed joint, and the patient will take care to obtain it by some means or other, and in no way is it more effectually obtained than by fixing the body and leg as one piece, and thereby most entirely preventing motion in the great seat of it between the body and extremities—viz., the hip-joint. Now the straight splint, fixing as it does around the hip, thigh, and leg, is the only means whereby that advantage is thoroughly obtained; the usual practice of placing a pillow beneath the knee, or a large piece of millboard or gutta percha around the joint only, or other contrivances according to the ingenuity of the surgeon, fails to do so in an effectual manner, and never can give that perfect rest which the splint affords.

The second object to be attained by the use of the straight splint is the prevention of suppuration, or if pus is formed, by the perfect rest which is obtained, to induce absorption, or at all events to determine the point at which the matter shall come to the surface. The author informs us that during the time he was dressing for Mr. Key, and when he first proposed this plan of treatment, two cases came under his care at Guy's Hospital, in both of which matter had formed previous to admission, the straight splint was applied, and in each case the abscess burst on the fore part of the tensor vaginæ femoris. These cases were alluded to in Mr. Key's remarks, in the 'Medical Gazette,' concerning this mode of treatment. As regards this question the author admits that there is some difficulty in deciding, and it is one which must always be open to doubt, as we so frequently see matter point at all parts around a diseased hip-joint, apparently without any reason; at all events he thinks the fact of three cases, two of which matter came to the surface, and one in which it nearly did so, no tendency to pointing taking place at any other place, is a remarkable coincidence, and one well deserving of notice.

3dly, and this is the greatest advantage which the application of the straight splint holds out—viz., the future position of the limb.

When the surgeon is called to a patient with hip-joint disease in either of the first two stages, we almost invariably find them lying on the opposite side to that which is affected, with the diseased thigh bent upon the pelvis, and the leg on the thigh, a position anything but the most likely to be of permanent usefulness should anchylosis occur, or such an imperfect amount of motion as usually follows acute mischief in any joint; the author, therefore, whenever called to see a patient labouring under this disease, after copious bleeding by leeches over the joint, places them on their back, and cautiously and carefully brings down the thigh to the level of the bed, and thereby straightens the knee. But one caution, he remarks, is necessary to be given in so doing; so tenacious is the hip-joint when in this state, of any even the slightest motion, so firmly have the muscles round about fixed the head of the bone in the acetabulum, that in doing so the spine frequently becomes arched about the lumbar vertebræ, and in reality, the thigh is at the same angle with the pelvis as it was before the leg was touched; this, however, he has generally found relieve itself very shortly. The splint, when placed on for the first time, soon requires readjusting, and upon the second application, should the bandage be starched, the whole pelvis and thigh becomes one solid mass, and preserves the most perfect rest. When the patients have the splint removed, and first get up, the author enjoins caution that they do not use the unsound leg until they have cautiously and carefully felt their way; two crutches are absolutely necessary at first, and one must be taken away at a time, lest too much weight should be thrown upon the leg at once.

Art. 47.—*New method of treating Fractures of the Thigh and Leg.* By Charles Rolls, m.d. (U. S.)

(*Upper Canada Journal*, and *Dublin Medical Press*, April 28.)

[The author examines critically the usual methods of treating fractured thighs and legs adopted in this and other countries, speaking both of the treatment in the bent position, and by the straight splint. He objects to both, though he prefers the latter; and proceeds to introduce his own recommendation, which is that of alternating the bent and straight positions at intervals suitable to the particular case. On this point he observes:]

The apparatus necessary for the mode (which I am about to recommend) of managing either a fractured leg or thigh, consists of three ordinary splints, suited either to the leg or thigh, as the case may be; the eighteen-tailed bandage; cotton wool or tow; and a *long splint*, extending from the axilla to the sole of the foot, the construction of which is as follows:—The head of the splint (if I may so call it) is like the head part of a common crutch, only so small that the patient may lie on the bed without being inconvenienced by the under part projecting. On the inferior part is a piece of flat board, inserted on the extremity of the third or leg portion of the splint, and which fits to the sole of the foot, from the heel to the toes. Between these two extremities the splint consists of three portions: the body portion extending from the axilla to the hip-joint; the thigh portion extending from the hip-joint to the knee-joint; and the leg portion extending from the knee-joint to the sole of the foot. These three portions are connected with one another by joints in the hinge fashion, so that the thigh portion can be bent forward and upward toward the body portion; and the leg portion downward and backward toward the posterior part of the thigh portion; or in other words, after the splint has been fixed on the patient, on the outward part of the injured limb, the limb can be placed in the bent position usually adopted by the English surgeons, and the splint, by means of its action on the hinges, accommodates itself to the position, and supports and retains the part in such position. I would recommend practitioners to have two or three such splints, of different lengths, according to the different periods of life of his patient; for instance, one for young children, one for more advanced, and one for grown persons: each joint of the splint made in proportion to the relative lengths which the different parts of the body to which they have to be applied bear one to another. In the middle of each part is a slide, so that each individual part can be lengthened or shortened to suit exactly the case under treatment. Immediately above the joint, at the hip, a broad leathern belt or strap is applied, long enough to buckle tightly around the pelvis; another at the knee-joint; and another at the ankle. Three small buckskin straps are affixed to surround the thigh, and three to surround the leg.

We will now suppose the patient lying in bed and all ready (in a case of fractured femur) for setting. I first arrange the long splint, by fixing it to the sound side, and either lengthen or shorten either or each of the parts (by means of the slides) as may be required. Laying

it (the splint) then aside, the extension and counter-extension of the damaged limb is made in the straight position. Three splints, well padded with cotton-wool or tow, are then adjusted, one anteriorily, one posteriorily, and one internally; and all secured with the eighteen-tailed bandage. The long splint is then applied on the external part of the broken limb, and well padded, from the axilla to the foot, in any part where it may come in contact with the flesh; the straps around the pelvis, knee, and ankle are then tightened as firmly as the patient can conveniently endure; the small straps around the fractured part, either thigh or leg, likewise tightened, and a common roller bandage applied from the ankle to the toes, so that the sole of the foot shall be firmly and securely affixed to the foot-board which I have previously described. This completes the operation.

If the surgeon be a firm believer of Mr. Pott's doctrine of the advantage of relaxing the muscles, he may, if he please, adopt it for the first three or four days or week (according to the feelings of the patient), by gently bending the knee and raising it, and supporting the portion with pillows properly placed under it; neither need he fear, in case the long splint I have described has been firmly fixed at the different joints, and the bandage from the ankle round the foot and board beneath it keep the sole firmly fixed in its position, that any derangement will occur. But I recommend that the straight position, as a general rule, be maintained, if possible, during the first week; after that, if all progress favorably till then, there is but little danger of derangement from any muscular action around the damaged parts.

I am well aware that this point—viz., moving a fractured limb from the position in which it was set, will raise many objections among those who have always been taught that perfect rest and freedom from motion are absolutely necessary in the treatment of the fractures under consideration. I am free to grant, under the treatment usually adopted, that it may be so; for what power, may I ask, have the short splints, which are in present use, to retain the parts in apposition. Certainly not enough to counteract the powerful action of the muscles, which action must have the direct tendency to drawing up, or, in other words, shorten the limb. If these short splints, therefore, only be used, perfect rest presents the best possible chance for a happy result in the case. But in the treatment before us, we have two fixed points—viz., the axilla and the upper surface of the board to which the sole of the foot is firmly and securely applied, and so long as the shoulder-joint (if I may use the expression) is preserved on an exact level with the other side, and the sole of the foot is kept in close apposition with the foot-board of the apparatus, so surely must the limb be kept of one length, let the position be bent or straight; of course I need not add the condition, that the measurement must have been exact, and the splints arranged with nice tact and due judgment.

To recapitulate. I object to the bent position for treating these fractures under consideration, for the many and solid reasons urged by Desault against its adoption; and further, because I am strongly of opinion that the weariness, irritability, and fatigue attendant (in all persons, but more especially in those of nervous, irritable temperament,) on long confinement in one position, materially retards the regenera-

ting process of Nature; further, because this position does not afford the surgeon the necessary facility for making an exact observation; and further, because I have seen so many deformities in cases treated under that plan.

I object to the straight position, as recommended by Desault, because of the weariness, &c., induced (similarly as in my objection to the bent position) by long confinement in one position; further, because although it might afford greater facility for the passage of dejections than the bent, it will not afford the same as can be adopted by the treatment I recommend; and further, because the long, straight splint, recommended by Desault, not having any fixed points of apposition, cannot keep the limb in a state of constant extension, such as I recommend, and which I am well convinced is the only sure method by which an exact union and a well-shaped limb can be, with any degree of certainty, counted on.

I recommend the new plan of treatment which, in this paper, I have endeavoured to bring before the attention of practitioners, because—1st. It will give them the advantage of setting the fracture in a straight position (which certainly is a great advantage), at the same time they may immediately after adopt the bent one if so inclined; at the same time, I do not *recommend* that position to be adopted before the expiration of a week, by which time, generally, the parts will have taken on a regenerating action. After this the positions might be varied to suit the feelings of the patients. 2d. I recommend this plan, because of the great facility it will give the medical attendant to judge of the correctness in the length of the limb. Each time he visits his patient he will have an opportunity of examining and comparing the length of the damaged side with the length of the sound one; and as long as the sole of the foot is placed in correct apposition with the surface of the foot-board, and the soles of both feet exactly correspond, the patient at the same time lying as straight on the bed as possible, and the upper part of each shoulder-joint being as correctly on a line as possible, so certain may he be that the limb is in correct apposition, and the cure progressing favorably. 3d. I recommend this plan of treatment because, as I before said, it will afford the patient, by being supported in the reclining posture, greater facility in the passage of his dejections. 4th. I recommended this plan, because of the very great relief it will afford the patient, by allowing him a frequent change of posture during a long and tedious confinement, and by this means conduce, at least in my opinion, to a more speedy recovery. 5th. I recommend it, because, with its other advantages, it combines that of continued extension, which Bichat so strongly recommends, and which I feel well convinced is the true secret of overcoming the resistance of opposing muscles, and of affording the best (I could almost say) the only prospect, in oblique fractures, of an exact and correct union of the fractured part.

ART. 48.—*Dislocation of the Femur, reduced without mechanical aid.* By Dr. REID. (U. S.)

(*New York Journal of Medicine*, Sept. 1851.)

The patient was a robust woman, and was bled and nauseated as a preliminary process. She was then placed on a lounge, on which a wide board was laid, and covered with a folded quilt. This made a firm table, about fourteen inches high, and about twenty inches wide, which gave Dr. Reid the opportunity of throwing the whole weight of his body on the flexed limb, while it gave him perfect command and control over it in every way. The patient was placed on her back, and a sheet, folded lengthwise, thrown across the upper edges of the pelvic bones, and each end given to an assistant, for the purpose of fixing the pelvis. Placing himself on the right and injured side, Dr. Reid seized the knee with his left hand, and the ankle with his right; he then flexed the leg upon the thigh, at the same time slowly carried the knee and dislocated femur over the sound one, pressing it firmly down upon it, and upward over the pelvis, constantly pressing it close to the body, moving it upward with a circular sweep over the abdomen, till the thigh was in a line with the right side of the body and the knee, pointing towards the right axilla. While the thigh was being carried up to this position, the bone or axis of the femur was performing a kind of rotation on itself, whereby the toe was coming more outward and the heel more inward. In other words, as the knee went upwards, the obturator externus, quadratus, &c., drew the head of the bone downward and inward towards its socket. When the knee and thigh were in the position above indicated, the heel was strongly rotated inward, the knee drawn outward, and the foot carried across the thigh of the sound side, when the head slipped into its place, and the limb glided gently down into its natural position. In doing all this comparatively very little force was employed, and very little pain produced, for the obvious reason that, by this evolution, the muscles that were in a state of extreme tension and irritation by the displaced bone, were gradually relieved and relaxed, as the head of the bone descended and approximated its proper place, which it did by the action of these same extended muscles.

Dr. Reid observes that by this mode of operating, we make a *lever* of the shaft or bone of the femur, and fulcrum of the edge of the pelvis, and by this means lift or dislodge the head of the bone, while the abductor muscles draw it downward and inward, making it, as it were, *back* into its place, through the rent of the capsular ligament. Whereas, if it were drawn by direct force, as by the pulley, the head and neck of the bone would act as a kind of hook, and would tear away the capsular ligament, if it were only slit, and in some cases also, tear off the tendon of the pyriformis, for the abductor muscles are so strained, and hold the head of the bone so firmly to the dorsum, behind the ridge of the acetabulum, that it is next to impossible for it to mount over this ridge and into the socket, and must therefore descend behind it, tearing everything before it—ligaments, muscles and all—and hence the immense power required to reduce it by these means; and hence,

too, the failures, the fractures of the neck, and the cripples that have been made for life, by this barbarous and unscientific mode of reduction.

Art. 49.—*Treatment of Sprains by "Firing."*
By James Dickinson, Esq.

(*Prov. Med. and Surg. Journal*, March 3, 1852.)

[The advantages of "Firing" in many forms of rheumatic and neuralgic affections have been pointed out by Corrigan, Day and others, (vide "Abstract," vol. III, p. 199.) Its use in sprains of the back seems to be one from which the most striking benefit may be anticipated, as is seen in the following remarks:]

Sprained backs are cases which give the surgeon much trouble and annoyance, appearing in many instances to resist every remedy. Many cases have come under my notice, and finding that blisters, cupping, stimulating liniments, &c., failed, I tried "firing," and the results have been most successful; patients who for many weeks have evinced the greatest agony, have, after the first or second application, been perfectly cured. The plan to be adopted is as follows:—Heat a metal button, the shank of which is fixed into a wooden handle, to such a temperature as can be borne with slight pain. Pass it lightly over the affected part, without inducing vesication, which is unnecessary. The pain produced is severe, but is transient. In long-standing cases two or three applications are required, in recent ones one will be found sufficient.

Art. 50.—*On the External Use of the Nitrate of Lead.*
By Dr. Ogier Ward, Kensington.

(*Prov. Med. and Surg. Journal*, Oct. 15, 1851.)

Dr. Ogier Ward was induced to make use of this preparation in cases accompanied by fetid discharges, observing its advantages as a disinfectant under other circumstances.

The first case in which he used it with this intention was that of a lady, whose lochia were so offensive as to scent the whole house, and nauseate even the nurse. It was used as an injection; and the third application effected the complete removal of the fœtor.

He has also used it with success as a lotion for sore legs when in a sloughy and indolent condition, and finds that it soon restores them to a healthy state, inducing a proper secretion of pus, with firm granulations on the surface of the ulcer.

He has not used the nitrate in acute gonorrhœa, but states that it acts admirably as an astringent in gleety discharges, as well as in those of cancer uteri, whether sanious or purulent. In short, as a lotion it is as extensively useful as the diacetate of lead, while it is superior to that preparation by its disinfecting property.

In chronic cutaneous diseases he has seen the most remarkable instance of its efficacy in a case of eruption, of a kind of rupia or

impetigo of five years' standing. The complaint broke out on the vertex of a woman, æt. 50, and, leaving its original site, it has gradually crept down over the forehead, nose, and cheeks, to the level of the mouth. The primary form of the eruption consisted of inflamed flattened pustules slightly elevated above the surrounding skin, which, discharging their contents, formed thick, rough, yellowish crusts, or scabs, fissured in all directions, like those of crusta lactea, which firmly adhering and growing from their base, like rupia, for a longer or shorter time, fell off at last, leaving cicatrices of various shapes, exactly like the seams and pits of smallpox. The patient came under Dr. Ward's care some months ago, when he tried many remedies, both internal and external, in vain, quinine being the only one that produced any good effect, and this not permanently. As the skin around the sores and where they had healed seemed in a state of hypertrophy, the papillæ projecting in many places as in elephantiasis, it occurred to him that the best way to check the progress of the disease would be to apply some penetrating astringent to the surface; and with this view he ordered a lotion of the nitrate of lead, with quinine internally. In the course of a few days the eruption ceased to make any progress, the crusts began to fall off, and the skin to lose its redness and swelling; and in a fortnight every sore was healed, though the face and forehead remained still seamed with scars. There has been no fresh breaking out for some weeks, though, as the nose is still red and swelled, he has ordered the continuance of the lotion.

The formula he generally uses is the following:

℞ Plumbi Carb., scr. j;
Acid. Nitr. dil., q. s. ad solvendum;
Aquæ dist., lb. j, M.
Fiat Lotio bis terve indies assidue utenda.

Art. 51.—*On the Nature and Treatment of Nævus.*

By Haynes Walton, Esq., Assistant Surgeon to St. Mary's Hospital.

(*Medical Times*, and *Gazette*, Feb. 28, 1852.)

[In a paper presented to the Medical Society of London, of which the following is an abstract, the author gives a clear and precise description of the structure and peculiarities of these growths. He says:]

Nævus is not, as is commonly supposed, a mere exaggeration or hypertrophy of blood-vessels. Great discrepancy exists among writers, from the indiscriminate employment of the terms "nævus" and "aneurism by anastomosis," and including with these certain changes in the venous system of a varicose condition, which, strictly speaking, have little relation to either. For surgical purposes, it is better to arrange nævi according to the position they occupy in the body, as subcutaneous, cutaneous, or mixed. The subcutaneous is more or less defined, but may be without definite limits, and, in proportion to its depth from the surface, is of a light bluish tint, or colourless. When deep, it is in all respects like the common fatty tumour, and its true nature may be so obscured as to be overlooked. Several examples of

erroneous diagnosis were given. The cutaneous variety is particularly well marked, and varies in extent and level, sometimes being a mere stain, or a conglomerate mass of vessels forming a tumour. A dissection of a nævus by Mr. Birkett, proved that it consisted of areolar, uniting, or fibrous tissue, epithelium, capillary vessels, and vessels of large calibre. Mr. Birkett concludes that they should not be called vascular tumours, as they are not made up of erectile tissue, but more closely resemble the corpus cavernosum of the penis. Mr. Paget considers them to be erectile tumours, with this qualification as for all other structures occurring in tumours, that the imitation of the natural tissue is imperfect or partial, also that the likeness these tumours bear to the erectile tissue, as exemplified in the corpus cavernosum penis, is sometimes perfect, of which examples were given, and opinions of Wardrop, Hawkins, Liston, and Rokitansky, quoted to the same effect. There is nothing positively known about their mode of development; pathologists differ. Whether they are always congenital is still disputed. Respecting pulsation in them, there is considerable difference of opinion, the author believing, that a simple nævus, however large, does not pulsate, and that for arterial thrill to be present, it must be more or less mixed with aneurism by anastomosis. Concerning non-interference, it was remarked, that there is no kind of nævus or vascular tumour in which there is any certainty of a natural cure, or unattended with the possibility of danger. With the bluish superficial nævus there is greater probability of natural resolution than in the scarlet kind; in the subcutaneous, still less. A debilitated constitution is favorable to their disappearance. The author's own course of proceeding is always to treat a nævus surgically, however small, when it shows any symptoms of increase, recognising that extirpation, slough, suppuration, and adhesion of their intimate structure, are the available processes of cure, which should couple the complete removal of the disease with the least subsequent deformity and destruction to surrounding parts. The most simple of all means of treatment is pressure, but its application should nearly be restricted to localities that will allow of counter-pressure. Cold, after Abernethy's plan, combined with pressure, is often beneficial, but Dr. Marshall Hall's system of breaking up the interior of the tumour with a needle is a more effective combination. Dr. James Arnott has strongly recommended the freezing of nævi. A plan of cutting and searing nævi by means of platinum wire made red-hot by galvanic battery is now being tried in London, which is a great improvement on Mr. Carron's method of cooking nævi with red-hot pins. Extirpation, with all its dangers, was alluded to, the author observing that there are not many cases in which it should be chosen, and that it was admissible only when the tumour was small, palpably circumscribed, and the surrounding parts healthy. The advantage of escharotics, and their peculiar adaptation to superficial nævi, was pointed out, together with Sir Benjamin Brodie's favorite practice of applying nitrate of silver to the interior of nævi by means of a probe. The injecting of nævi was reprobated, and its dangers exposed. The ligature was spoken of as the most generally applicable plan, as well as that which could be most frequently used in combination with other modes; and it is mentioned as a great

improvement not to allow the tied part to slough off, but to release the ligature as soon as the surface is blackened, and the superficies evince a loss of vitality. When more than one ligature is required, it is better to employ some kind of double tie or knot, which traverses the nævus uniformly, and the author's new knot was submitted to the Society. Mr. Curling's improvement of tying nævi subcutaneously was mentioned, and some diagrams given, its advantage being the saving of skin when the surface is sound, and the prevention of contraction, where it would be very injurious. Lastly came the modifications of the ligature, the seton, and the twisted suture,—the seton being followed by less scar than any other known device, except subcutaneous tying. The twisted suture is, perhaps, less useful than any means of tying. When the position of a nævus about the head or face, or the circumstances of it, forbade any of the foregoing means, or when local measures would be unsuitable or unavailing, the tying of the carotid artery on the corresponding side was called for. Mr. Wardrop's remarkable cases were adduced. The peculiarity of venous or cystic tumours, and their supposed development from congenital nævi, were also mentioned.

ART. 52.—*Remarks on the Double Flap Operation in Amputation of the Thigh.* By NATHANIEL WARD, Esq., F.R.C.S.

(*Medical Times*, and *Gazette*, Jan. 24, 1852.)

[Mr. Ward criticises the operative proceeding, advised by Liston, of making the upper flap before the lower, and the latter longer than the former. One reason for his objection is, that after the upper incision has been made, the skin behind the bone is no longer tense, and unless the operator has a large hand capable of grasping and rendering tense the whole posterior aspect of the thigh, the border of the lower incision will be irregular. He then proceeds to show how this and other inconveniences can be remedied:]

How, then, are these inconveniences in the double flap amputation, as usually performed, to be obviated? Simply by making the lower flap first; and by making both flaps equal. To effect this, the operator, whether intending to remove either the right or the left limb, stands on the right side of the patient, and consequently on the fibular side of the right limb, and the tibial of the left. He places the left hand on the thigh above the part to be operated on; then takes a profile view of the limb, and inserts the amputating knife midway between its anterior and posterior surface. It is passed quickly, transversely, to the opposite side of the limb; and by being inclined neither backwards nor forwards, is made to emerge at a point corresponding to that at which the instrument was passed in. The knife is then carried downwards and forwards, so as to make the lower flap, which, in consequence of its having been formed during the tension of the integuments, is perfectly even. The upper flap is then proceeded with, and is formed in a reverse manner to the lower. The knife is swept round the integument, commencing a little anterior to the point of emergence of the knife in the first steps of the formation of the lower flap, and terminating a little in front of the point of entrance, the incision

corresponding in form and length to the incision of the skin in the lower flap. Two sweeps of the knife obliquely backwards are sufficient to divide the subcutaneous muscles. The lower and upper flaps thus formed are held back by an assistant; the knife is then swept round the bone (in the angle between the two flaps) so as to divide the muscular fibres which are in immediate contact with it and the investing periosteum, and the saw applied. Thus far the operation is complete.

The two flaps being thus equal in length, and having their bases equal, and their borders even, can be applied easily to each other without the use of any undue traction, and the line of incision is such as to allow of the free egress of matter that may collect between them, supposing them not to unite by primary adhesion. On the cessation of hæmorrhage, the two flaps are brought together by sutures, and supported by a compress above and below, maintained in position by a few strips of plaster and a turn or two of a roller. The application of the compresses is a matter of considerable importance; the object in their use being to apply a sufficient amount of support to keep the whole of the opposed surfaces of the flaps in mutual contact. With this object in view, their size should be so regulated as to be applied over the entire surface of each flap, but not on the extremity of the bone in the angle between the flaps.

This method has been had recourse to for several years at the London Hospital, and was first introduced by Mr. Luke, and has been performed by him and the other surgeons of the institution with considerable success,—a good stump almost invariably resulting. It is not only applicable to the thigh, but also to the arm, forearm, and phalanges of the fingers; the leg, and phalanges of the toes.

Mr. Luke attributes the favorable result that has attended his amputations, in a great measure to the careful application of the compresses. Primary adhesion of the two flaps has frequently taken place throughout their entire extent, and he can hardly call to mind any instance in which such has not been the case to a greater or less degree.

Independently of the advantages thus alluded to, as being connected with this form of operation, another very important one should not be omitted to be noticed. During and after the process of union, the slow tendency to retract on the part of the muscles of the lower flap, brings the cicatrix away from the immediate pressure of the end of the bone when the stump is used; whereas in that operation in which the lower flap is made the longer, the cicatrix is brought opposite to the bone. Whether the operation be performed on the thigh, leg, arm, or forearm, the centre of the limb is always taken as the point at which the knife is to be passed in, without reference to the bone or bones. Sometimes the knife will be passed in nearer to the bone than at others, this depending on the relative muscular development of the part operated on. Thus, in the amputation of the leg below the knee in a muscular limb, the knife will be passed in further from the bones than in a thin limb.

The above are the principal points connected with the *amputation by equal flaps*. I am not aware that it is anywhere described; and, for the reasons mentioned, I think it well worthy the attention of the profession.

Art. 53.—*On the Nature and Treatment of Fistulæ in Ano.*

By J. S. Hughes, M.D., F.R.C.S.I.

(*Dublin Medical Press*, Nov. 20, 1850.)

[The following observations occur in a clinical lecture on the above disease. Speaking of the affections which are precursory of the false passage, the lecturer first describes the course of phlegmonous inflammation of the verge of the anus and its treatment, after which he proceeds to the consideration of fistulæ in ano more particularly.]

Fistulæ in ano have been divided into three different forms, according to the mode in which they open; thus, when a fistula has an opening externally in the integuments, and also internally into the rectum, it is designated a complete fistula in ano. When the matter makes its escape externally only, through the integuments by one or more openings, but has no communication with the intestine, the case is termed a blind external fistula; and when the matter opens internally into the rectum, having no external outlet, the disease receives the name of a blind internal fistula.

In the complete form of fistula in ano, the internal opening is most frequently situated near the verge of the anus, immediately above the superficial sphincter ani muscle, seldom exceeding from a few lines to an inch and a quarter, or inch and a half, although the cavity of the abscess with which it communicates may extend much higher up —a fact which I beg to impress on all, as being one of considerable practical importance, as I shall presently point out when directing attention to the treatment of these cases.

Till within a comparatively recent date, writers who were received as the best authorities on the subject of fistula in ano, have recorded their opinion that the external blind fistula was the most common form of the disease; however, one of the highest modern pathologists —I mean Sir B. Brodie—has, from extensive investigations on both the living and dead, arrived at the conclusion that the complete fistula in ano is the most frequent form of the disease; indeed, Sir Benjamin Brodie is so impressed with the fact, that he states that there are very few cases, if any, in which the fistula does not communicate with the gut internally; and he insists, that if the surgeon will only look for the internal opening in the proper place, that he shall surely find it; and he asserts that although the action of the sphincter and levator ani muscle may interfere with the healing in of an abscess in connection with the rectum, yet he principally ascribes its non-healing to the constant presence of this internal opening and to the continued irritation kept up by the infiltration of the contents of the bowel whether feculent or gaseous, into the cavity of the abscess.

When this announcement was first made it startled the profession not a little, emanating, as it did, from one of the highest authorities in Europe, and which, if established, would throw considerable light not only on the pathology but also on the treatment of fistula in ano; however, there are many excellent surgeons who still question the invariable presence of the internal opening in fistula in ano. The subject is one of deep interest, and in my mind can only be settled by

an extensive series of *post-mortem* examinations. I therefore wish to speak cautiously on the subject; still I hope I may, without committing myself, say that I suspect cases have been considered as blind external ones which were really of the complete form, and I am convinced that such mistakes can satisfactorily account for the occasional failure of operations for fistula in ano. I therefore am of opinion, that the profession is much indebted to Sir Benjamin Brodie for having directed their attention to the frequency of the internal opening in fistula in ano.

In searching for the internal opening in these cases, we shall often be obliged to bring both our sense of touch and sight into effect, before we succeed in finding it. The educated finger will sometimes enable us to detect the opening in the intestine where, from the tortuous route of the fistula, the probe has failed to point it out; and the speculum which was invented by the late Mr. Colles, will often, if we know how to use it properly, throw considerable light on affections of the rectum, and will sometimes bring the internal opening of a complete fistula in ano before our eye, where both the finger and probe have failed to discover it. The instrument is constructed on a very simple plan; it consists of a conical piece of polished box-wood, presenting, in its transverse section, an elliptical form, and a blunt highly polished metallic gorget, which, when placed together, present a smooth outline. They are, when so placed, well oiled and introduced two or three inches into the rectum, the boxwood portion is then withdrawn, whilst the gorget is retained, the patient is then desired to force down, whilst an assistant divaricates the buttocks, by which means the wall of the gut is reflected on the concave surface of the metallic gorget, when its condition can be accurately examined.

When we inquire into the *causes* of abscesses in the neighbourhood of the rectum, conducing to fistulæ in ano, we shall find that although they are very numerous, still they may be practically divided into two great classes—viz., local and constitutional. Amongst the former may be enumerated hæmorrhoids, the passage of hardened fæces, irritation of the lower end of the great intestine, no matter how produced, exposure to cold by sitting on wet seats, &c. In some rare cases, fistula in ano is referable to solid matter swallowed by the patient with his food, such as spiculæ of bone, &c., which becoming impacted in the rectum, ulcerate through its coats, and become the exciting cause of inflammation and suppuration in the cellular membrane, external to the intestine. Amongst the constitutional causes of fistula in ano, the most frequent are diseases of the digestive and pulmonary organs, but more especially the latter.

Every surgeon of experience is aware of the great tendency to chronic abscesses in the neighbourhood of the rectum in phthisical patients; with which fact I first became impressed some years since, when I was acting as clinical clerk to Sir Henry Marsh at Steevens' Hospital, where vast numbers of patients affected with pulmonary diseases sought the advice of that truly eminent and practical physician; and having taken notes of all the cases at the time, I found that the percentage of the phthisical patients who were labouring under fistula in ano was remarkable. Writers on this subject have

attempted to account for the frequency of fistula in ano in patients labouring under pulmonary consumption, by their liability to ulceration of the intestines, especially the large one. The ulcer not confining itself to the mucous membrane makes its way through the other coats of the intestine, and gives rise to inflammation and suppuration in the cellular membrane external to the gut; and although this is a very plausible theory, which may, in a number of cases, account for the presence of fistula, yet it does not hold good in all cases, for I have seen, and I presume most medical men have also met with, cases of fistula in ano in persons labouring under phthisis, who had no symptom of intestinal diease whatever.

In fistula in ano accompanying phthisis, the progress and formation of the disease are usually extremely insidious, the patient being often unaware of its existence until his attention is attracted to the affection by the presence of purulent matter on his linen, or until he undergoes a scrutinizing examination by his medical attendant.

There are certain diseases which have occasionally been confounded with and treated as fistula in ano; the possibility of falling into such mistakes we must therefore hold in mind. The following are the principal affections that are most likely to mislead an inexperienced surgeon in these cases—viz.: abscesses in connection with the hip-joint opening near the rectum, psoas abscess bursting near the anus, sinuses in connection with organic diseases of the rectum or prostate gland, and suppurating tracks traceable to and depending on disease of some of the bones in the neighbourhood, as, for instance, the pubis, ischium, sacrum, or coccyx.

Treatment of Fistula in Ano.—It may, I conceive, be safely asserted, that no branch of surgery has received a greater amount of improvement in modern times than the treatment of fistula in ano. The ancients laboured under an impression that the fistulous character was kept up by what they termed a callosity, and they devised numerous formidable and dangerous methods of destroying that callosity by excision, the actual cautery, caustics, &c.; and it was not until Mr. Pott directed his attention to the subject, that the true nature of fistula in ano and its appropriate treatment became known to the profession. Mr. Pott, in his usual clear and forcible manner, pointed out the important fact, that in order to effect a perfect cure in fistula in ano, it was only necessary to lay the cavities of the fistula and rectum into one, by which simple operation the action of the sphincter ani muscle was temporarily arrested, and the subsequent healing of the parts thereby favoured. Mr. Pott also pointed out the impropriety of stuffing the wound with stimulating dressings, and proved that the only application requisite after the operation was that of a light dressing to the wound, in order to prevent its lips from healing in sooner than its deeper parts.

Before we think of proposing an operation for any of the forms of fistula in ano, it becomes our duty to institute a most searching inquiry into the state of our patient's health, especially as regards his pulmonary and digestive organs; for if organic disease of these organs should exist, and that an operation on the fistula was performed, discredit would assuredly be entailed, not only on the opera-

tion, but likewise, and deservedly so, on the operator; for either of two things would to a certainty happen—viz., that the wound inflicted by the knife of the surgeon would not heal in, but would take on an unhealthy action; or if it did heal, that the patient's life would thereby be considerably shortened, the natural drain being suddenly arrested, the organic disease would redouble its strides. If, on inquiry, we find that before the establishment of the fistula our patient was liable to attacks of blood to his head, or more decided apoplectic symptoms, we should not think of performing an operation for a cure of the fistula, for in such cases the fistula acts a sort of natural safety valve. It is also necessary, before recommending an operation for fistula in ano, to inquire into the local circumstances of the case, for I need scarcely say, that if we can trace the fistulous opening high up in connection with diseased bone, scirrhous rectum, diseased prostate, &c., that the operation for the cure of fistula in ano would be uncalled for, and if proposed, would exhibit profound ignorance on the part of a surgeon.

It is possible for us to meet with a case of purely local and uncomplicated fistula in ano, in which there may exist a temporary derangement of health. Here it would be highly imprudent to operate without having first endeavoured to improve the constitution, otherwise the wound necessarily inflicted by the operation might either not heal at all, or be seized with an unhealthy inflammation. In such a case, therefore, if our patient should be a citizen, we ought, if possible, make him sleep in the country for a week or two, and recommend him light nutritious diet. If his stomach and liver should be deranged, we should order him a blue pill at night, followed by a tonic and aperient draught in the morning; and when by these means we have established a better state of health, we may proceed to operate with the full expectation of the wound healing in from the bottom, and of our performing a perfect and permanent cure

Previous to operating on a fistula in ano, we should have the patient's bowels well cleared out by means of a suitable purgative enema; for once the operation has been performed, the bowels should be kept in an inactive state by proper regimen, opiates, &c., for several days, in order to maintain the parts in a quiescent state, and thereby favour the healing in of the incision. The position that the patient should be placed in for the operation is one of some importance. Some prefer the kneeling posture on a chair, with the thighs divaricated, and the head and chest supported by the back of the seat; whilst others recommend the patient to be placed in the standing position, with the soles of his feet applied flatly to the ground, and his head and chest leaning over a steady table. I generally place the patient in the former position; but whichever attitude we select, we must have the buttocks kept well apart by an assistant. We should then introduce a curved silver director through the external opening, and endeavour by means of it and the forefinger of the left hand introduced into the rectum, to find out the internal opening, should one exist, which, we must recollect is, in the generality of cases, situated just above the sphincter muscle; but in trying to find out the trajet of the fistula and its internal opening, we should first pass the

probe into the fistula, and then pass our finger, well oiled, into the rectum; for if we, in the first instance introduced our finger, we should destroy the relative position of the parts by distending the gut. Having hit off the internal opening, a blunt-pointed and slightly curved bistoury should next be introduced into the fistula, guided by the groove in the director. The finger in the rectum will now detect the point of the bistoury. The director should then be withdrawn, and the last phalanx of the finger having been passed above, should then bend over the point of the knife by raising the handle of the latter. Both the finger and knife are to be brought out at the verge of the anus, a sawing motion being communicated to the knife, by which incision all the parts intervening between the fistula and rectum shall have been completely divided; or, following Sir B. Brodie's plan, the operator, after having passed the director into the internal opening in the gut, may then bend the director with the point of the forefinger in the rectum, and having brought it out at the anus, should next introduce a long probe-pointed bistoury along the director, and with a sawing motion divide the substances between the fistula and rectum. In whichever of these ways the operation be conducted, we should dress the wound lightly, so as to induce granulations from the bottom, and prevent its lips from closing prematurely; a T bandage should finally be applied, in order to keep the dressing in its place. On the third or fourth day after the operation, we should, if necessary, give the patient a mild aperient medicine. Should the lips of the incision take on an inactive character, we may apply a slightly stimulating lotion to the part; as, for instance, the black wash, a weak solution of sulphate of copper, &c.

If the patient should be very unsteady during the operation, or that the parts to be divided should be very much indurated, being converted into a grisly consistence, there is a remote possibility of the bistoury snapping across,—an untoward circumstance, which has happened to the best operator; and for this reason we should always, in these cases, be provided with a second knife.

Having now described the operation for the complete fistula in ano, we can understand the importance of knowing that the position of the internal opening is, generally speaking, near the orifice of the anus, just above the sphincter muscle, when I state that some of the most experienced surgeons have taught us that, in operating on cases of complete fistula in ano, it is not necessary to carry our knife as high up as the abscess may extend, provided we include the internal opening in the incision, and lay it and the rectum into one. To Sir B. Brodie we are principally indebted for the knowledge of this practical fact, one of the greatest importance, as both limiting the incision in the operation, and also as guarding the patient against the risk of alarming, if not fatal, hæmorrhage. So fearful were some of the old surgeons on this point, that some of their highest authorities, including Garenglot, Heister, and others, that they recommended surgeons to refrain from the knife in cases in which the cavity of the abscess extended high up along the rectum, on account of the danger of dividing the large hæmorrhoidal arteries and veins.

If, after making the necessary examination, we cannot find an

internal opening into the rectum, the case being, in fact, a specimen of the external blind fistula in ano, the bistoury must be passed, as in the complete form of the disease, and the point must then be pushed through the denuded mucous membrane of the intestine, and the operation completed, as I have just before described.

When, on the other hand, the case proves to be an internal blind fistula, there being no opening into the gut, we shall generally, by pressing the integuments at the side of the rectum with the point of the finger, detect the situation of the cavity of the abscess by the yielding sensation, around which a hardness can often be felt. Here we must plunge the point of the lancet in this part, and convert, in fact, the blind internal into a complete fistula in ano, which is then forthwith to be treated on the same principle as that laid down for the ordinary complete form of the disease.

Many of the continental surgeons are always in the habit of using, when operating on fistula in ano, a rectal gorget, generally made of wood, which they introduce into the rectum, and passing the bistoury through the external fistula on to the gut, they then divide the parts intervening between the rectum and trajet of the fistula on the gorget; and although, in the ordinary cases of the disease in which the internal opening is near the orifice of the anus, I do not, as it is well known, advocate the use of any instrument in the shape of a gorget, still, in certain rare forms of the complete fistula in ano in which the internal opening is higher up in the gut than usual, and where there is considerable difficulty, if not an impossibility, of bringing down the knife by the finger, without cutting one's-self, and more of the intestine than we should wish, and which will always be the case where the inner opening is placed much over two inches in the gut, I have used the gorget—an instrument invented by our distinguished countryman, Sir Philip Crampton, and made by Messrs. Read and Co., of this city. This gorget is of sufficent size to receive the index finger; it is furnished with a short handle, and is open on one side to within about two thirds of an inch of its rounded extremity. This instrument possesses the advantages of answering both as a gorget and speculum ani at the same time. I have employed it in two cases in which the opening in the intestine was unusually high, and conducted the operation by passing the probe-pointed bistoury on a director through the fistula, receiving its blunt edge in the groove in the gorget introduced on the index finger of the left hand into the rectum, the grooved side being opposed to the internal opening. I then withdrew my finger, and having taken hold of the handle of the gorget with my left hand, and the bistoury with my right, I divided the parts intervening between the fistula and rectum by communicating a sawing motion to the knife, and conducting its point downwards along the groove in the gorget, and bringing out both together at the verge of the anus.

When bleeding follows the operation for the ordinary form of the complete fistula in ano, in which the internal opening is near the sphincter muscle, it seldom gives the surgeon much trouble. Being within his reach, the vessel is sometimes visible, and easily secured; but when the case is of a more uncommon form, the internal opening

being higher up in the gut, a very troublesome and even fatal hæmorrhege may ensue; in which case the blood is poured out into the rectum, which becomes distended with it; the patient becomes faint, and feels an urgent desire to go to the water-closet; but when there, he finds that he passes nothing but blood. If the bleeding should proceed unchecked, the patient becomes blanched in his face, his pulse becomes feeble and intermitting, and his life is endangered. What should our mode of proceeding be in such a case? In a few fortunate cases the bleeding vessel may be brought into view by means of the speculum ani, and secured with a ligature; but often the hæmorrhage would appear to arise principally from a plexus of large hæmorrhoidal veins, in which case the ligature could be of no use whatever.

Here I have seen the plan recommended by the late Mr. Colles, in his lectures, adopted, and with success, which consists in introducing into the retum a suitable sized sponge, secured by a double ligature, which is to be passed up above the bleeding point, and then filling up and distending the lower part of the intestine with pieces of lint. I have lately seen a very alarming hæmorrhage after the operation for fistula in ano suddenly and completely arrested by the application of a strong solution of gallic acid to the bleeding surface.

The treatment of fistula in ano by means of the ligature has of late years been reintroduced into practice by some of the British surgeons, but especially by Mr. Luke of the London Hospital, who has published a series of cases in which this method was tried. Mr. Luke states that the following are the advantages of the ligature over the knife:—1st. The shorter period which usually elapses before the final cure. 2d. The less pain which is usually experienced during the treatment. 3d. The absence of all dread of the knife, and the consequent inducement which it offers to the timid to an effective curative treatment; and lastly, the avoidance of all danger from bleeding—an advantage of great importance in the deeper forms of fistulæ which communicate with the rectum at a considerable distance from the anus; but, although the cases treated by Mr. Luke might encourage us to try this plan of treatment, it has not proved itself to be either a less painful or a quicker mode of cure in the hands of other surgeons, as we can gather from the journals; and the treatment is not likely, I conceive, to be generally adopted by the profession: indeed the only case in which I should myself be induced to try it would be one in which a patient positively refused to permit the operation by the knife—a case not likely to be often met with.

Art. 54.—*Clinical Lecture on Stricture of the Urethra and Perineal Section.* By William Fergusson, Esq., f.r.s.

(*Medical Times*, March 13, 1851.)

The author purposes, in the following remarks, to treat upon stricture of the urethra and fistula in perineo—subjects which always demand great attention, and which are now more than usually interesting, as there has been of late a great deal of discussion in the

surgical world respecting the treatment of these affections. He is also the more induced to bring the subject of stricture of the urethra under the notice of the profession, because a most interesting case of this nature lately occurred in King's College Hospital. The following are some of the particulars of this case, and of what happened:

The patient, a man, aged 32, a native of Lincolnshire, was admitted under Mr. Fergusson's care with a very bad stricture of the urethra at the latter end of October. The cause of the stricture was an injury which he received twelve months previously, from his being thrown with violence on to the pommel of a saddle, while leaping a horse at a fence. This injury produced no external wound, but blood passed away from the urethra, and he had retention of urine. He placed himself under the care of a surgeon, who relieved him by the warm bath. Subsequently, the symptoms of stricture became more and more severe, and his surgeon made attempts to get an instrument into the bladder, but always failed in doing so. When he came into the hospital he was found to have a very bad stricture. There was some induration along the course of the urethra in the perinæum, but not very much. He passed his water with difficulty, and in a stream about as large as a No. 2 catheter. On examination, a stricture was found at the bulb of the urethra, which would not admit any instrument. Careful attempts were made on various occasions, but no instrument could be passed, and the symptoms became much more severe,—the most prominent being a constant dribbling away of the urine.

On November 15th, the patient was brought into the theatre for the purpose of having the strictured part of the urethra divided from the outside. Chloroform was given, and when the patient was fully under its influence, Mr. Fergusson first tried to pass a No. 2 silver catheter, but after making an attempt for some time he could not get it in. No. 4 was now tried; this was passed somewhat further into the canal, but not into the bladder. No. 5 was then tried, and, after the employment of some considerable force, it passed through the stricture and went into the bladder. A large quantity of alkaline urine was drawn off, the instrument was tied in, and the patient placed in bed. The author then proceeds to say:

"Well, seeing the result obtained in this case, it will be observed, that in it is involved a practical question of very great interest to surgeons of the present time, for this man was brought into the theatre for the purpose of undergoing the operation of perinæal section; that is to say, providing I could not do what I had hitherto failed in doing, viz., passing an instrument into his bladder. However, when chloroform was used I was able to pass a catheter, and therefore the condition which in my opinion warranted an external incision before, no longer existed; but the essential feature connected with the propriety of the operation, as recommended by Mr. Syme of Edinburgh, was still here, for the proposal of that gentleman is to divide the stricture only when an instrument can be previously passed as a guide to cut upon. I stated, that I would be contented with having passed an instrument, and try if the patient would go on well without any cutting, although I did not make up my mind that he would do eventually without

submitting to a cutting operation, because it was one of the worst and most difficult kinds of stricture,—one resulting from an injury,—always most difficult to treat and most ready to return. Having said thus much about this case, I will, before making some general observations, refer to another instance, where I have put in force the same kind of operation which I intended to have done in the one just mentioned, but where the circumstances are considerably different; it is that of the man Abraham, 49 years of age, who was admitted under my care in the middle of October with a fistulous opening in the perinæum, and a stricture of the urethra. Somewhat less than a year ago, he had the symptoms of his disorder for the first time. Instruments were passed from time to time, and soon after their use an abscess appeared in the perinæum; it was opened, and the urine escaped from the sinus which remained. He soon went to one of the London hospitals, and remained there for six weeks, where instruments were passed, but he did not get any better. During the summer he came to King's College Hospital under my care, but his health was weak, and he was advised to go to the sea-side and return again.

"When he was re-admitted, there was still a large sinus remaining in the perinæum which had existed on the former occasion; the urine came away through it, and there was not the least disposition to heal, although as large as a No. 8 catheter could be inserted into the bladder. On the 18th he was brought into the theatre, and a No. 6 grooved staff being first passed into the bladder, the strictured portion of the urethra was divided, and the sinus laid freely open by an incision in the median line. I shall say something more about this case presently; but just now I may state, that, in this instance, the operation commonly called perinæal section has been done, and it was my intention to have performed it in the first-mentioned case: but, as matters turned out, it was not considered necessary or justifiable. I have no doubt that general attention has been drawn to this subject, because much has of late been written about it by various surgeons, and I myself have brought it frequently under observation. Now, the ordinary mode of proceeding when a case of stricture is under our care, is to introduce an instrument, and endeavour to dilate the stricture with the least possible amount of injury to the urethra. In common cases we begin with a No. 3 or 4 bougie or catheter, but sometimes a smaller instrument is found necessary; in another case we find we can begin with a larger, such as No. 6 or No. 8,—the surgeon repeating the proceeding from time to time according to circumstances; sometimes as early as twenty-four hours; but, when there is any amount of irritation, forty-eight hours or more are allowed to elapse; in the majority of cases every third day, or twice a week, will be sufficient. Now, in most cases, benefit is immediately derived after the passage of the first instrument; many symptoms are relieved, such as the difficulty in making water, the dribbling, and the discharge. Usually some half dozen operations are required before very decided benefit accrues; and before a cure is brought about, it may be necessary to pass instruments on twenty or thirty occasions. This all depends upon the particular condition of the stricture,—upon the number of strictures. There may be more than one obstruction; one may be soft, easily

yielding; while another may be hard and resisting. In some cases there is great irritability; the patient will scarcely bear the introduction of an instrument, and, instead of there being any improvement, the irritability will become so distressing that the practice must be laid aside. But, in a great number of these troublesome cases, it will be found that the general condition of the system is at fault; and it is highly necessary that the surgeon should find this out, and, by the administration of proper remedies, endeavour to correct the morbid state. It is highly important to bear this in mind, for, by the use of proper medicines, a stricture may become so far improved, that some persons even have fancied that a cure may be brought about in this manner; but we must not trust to this; it is only those of very limited experience who would assert that strictures may be cured by medicines alone.

"It often happens that the surgeon may be enabled to pass, after a time, a No. 10 or 12 catheter; but the patient will ere long return with many of his bad symptoms on him; perhaps in a few months, weeks, days, or even hours, the stricture may be as bad as ever. This is one of those instances where there is an obstinate tendency in the strictured portion of the urethra to contract again. In cases like this, various measures have been recommended, but more especially caustic, —either nitrate of silver or potassa fusa; the latter application has been extensively used, but by no one has it been so much employed and lauded as by my friend Mr. Wade. He has had great experience, and speaks most highly of it; and I myself have, in several instances, where I thought it would be a fit remedy, used it, and can speak as to the beneficial influence which it possesses in the treatment of some severe forms of stricture. Nevertheless, the application of caustic may be said to be an exception to the general rule, and the treatment of these bad and irritable cases of strictures has generally been by the bougie or catheter.

"Now, it is a very common complication of stricture, that there should be abscess or sinus; in the one case, there may be an opening into the urethra; in another, the opening may be in the perinæum. The history of these cases is somewhat obscure; however, in some instances it is curious how we may trace the history of an abscess connected with the urethra. We may detect matter early,—open it even,—and yet we may not perceive that it is connected with the urethra, until we find that the urine dribbles away from the opening we have made; then indeed there can be no doubt that the abscess has opened into the urethral canal. When the abscess has been opened in the perinæum, and it is connected with the urethra, a fistulous tract remains, and it is extremely difficult to close the sinus. In general, the surgeon has been hitherto content to dilate the stricture; and in some cases where the urethra has been fully opened up, the sinus closes; in others, he lays them freely open, as in any other locality. This measure sometimes succeeds. Still there are some cases very difficult to close, because the urine coming away from the bladder cannot pass freely through the strictured portion of the canal, and, therefore, makes its way more easily through the fistulous opening. After lithotomy, we have a sinus in the perinæum, through which the urine flows for some

days; but we leave the wound and urethra to themselves, and, after a time, the former heals up entirely. It is a rare thing to meet with a sinus after lithotomy; but here is the difference: In the latter, the urethra is quite healthy—the water can pass freely along it—there is no obstacle there; but there is a little obstacle in the wound, which becomes greater and greater every day, so that it soon heals up, leaving the urine to pass by the urethra; whereas, in a case of fistula accompanying stricture, there is an obstacle to the urine flowing by the urethra, and therefore it comes through the artificial opening, and prevents it from healing.

"Now, suppose the surgeon meets with a very bad case of irritable stricture, such as I have been speaking of, and which does not yield to instruments, can he do anything more? It might perhaps be set down as a maxim in surgery, that he can do no more; but maxims of surgery are not immutable, and in this art there is still much room for improvement. Now, I think it must be admitted that we are indebted to Mr. Syme for proposing division of a stricture under these circumstances. Division of a stricture by external incision, however, is by no means a modern practice; it is as old as the time of Wiseman, and it has been followed since, from date to date. The surgeon has been induced to operate in consequence of his inability to pass a catheter, in infiltration of urine, where there have been bad fistulæ, and where life has been placed in jeopardy. Still the operation has been by no means of frequent occurrence; but this practice has been put in force with the very best results in such cases. I myself have had numerous opportunities of performing what we may now term the old operation of perinæal section, and with very great success.

"But the practice which has been recommended by Mr. Syme is different from that I have just been speaking of. The proposal of that surgeon is, to divide the urethra externally in certain cases of irritable and contractile stricture which resist the ordinary practice by the bougie; and he makes it an essential feature in his operation, that a small sound should be previously introduced through the stricture, and that the division should be made upon this.

"Now, my own opinion is, that in certain cases it is an admirable operation, and gives relief; but then I think it is an operation which ought not to be applied without great consideration, and not until all other modes of treatment have failed; for although some cases have turned out well, much mischief has been done in others. I myself have seen death result from it, and also danger of the worst possible description, and am so impressed with this, that we must always be cautious before we resort to this so-called perineal section. Its true value remains yet to be proved; the time is not yet come for us to say much positively of it. We have not yet had sufficient experience to say that it will prove generally serviceable. One of the most satisfactory cases I have had was in a gentleman who suffered terribly from stricture and its consequences. He was at first under the care of the late lamented Mr. Liston, who treated him by bougies, with relief. At that surgeon's death he came under my care. His chief symptom then was a succession of aguish fits, which were most violent, and in fact the patient himself thought that he had regular ague. However, I

found that he had a very troublesome stricture. There was excessive irritability when an attempt was made to pass instruments, and it was followed by a severe attack of shivering. No benefit was derived by the attempts at dilatation, although I could pass a No. 3 or No. 4 catheter, and it appeared to me that the patient's constitutional suffering was entirely dependent on the state of his urethra. With a view of effecting a permanent cure, I proposed to him that I should cut his stricture and relieve his ague at the same time. The operation was done; the patient had no bad symptom after it, and all his previous distress went away. This is now three years ago; within the last twelve-months, however, some of his former bad symptoms have returned, in consequence of his having neglected to pass bougies; and he has lately been to town to have instruments passed, as the urethra had again contracted. Now, here we have an instance where the operation was attended with great benefit; but still it shows that after all, there is a tendency in the disease to return, and that the cure is not a permanent one.

"I will now just draw attention to the case of the man Abraham, on whom I performed the same operation. This case may make us doubt as to whether it was the best thing that could be done for him. I could pass an instrument here, but, nevertheless, the fistula in the perinæum would not heal, and I therefore performed the operation according to Mr. Syme's plan; but those who have watched the progress of the case will see that he is not much better. There is now —more than a month after the operation—a great deal of irritation about the bladder; he passes his water frequently, and it contains a great deal of mucus and pus; the wound has not closed up; in fact, instead of his being well a week or two after the operation, he is now perhaps not much better than before. However, we must not judge hastily of this operation from this case alone; we may probably have some further opportunities of testing the value of this proceeding; and until we have had some further experience of it, it will be well if we suspend our judgment regarding it.

"In Barton's case, first spoken of, there was impervious stricture; in fact, I could not pass any instrument after many attempts, and, it will be remembered, he was suffering from a most severe symptom, namely, a constant dribbling of urine. The bladder was distended; so much so, in fact, that it could contain no more water, and it kept dribbling away. This man himself was quite unaware that his bladder was in this state. Under these circumstances, and finding that I could not pass any instrument into the bladder, it seemed to me that it would be well were I to try incision. Hitherto the patient had been treated in the ordinary manner,—that is to say, I had used the catheter on my visits to the hospital while he was in bed, but I now determined to have him brought into the theatre to place him fully under the influence of chloroform, and then make a last attempt to pass an instrument; if this failed, to perform the perineal section. It was seen that, after two or three patient attempts, I was enabled to break down the firm stricture, and pass the catheter into the bladder. I did not use a small instrument, because it is much more dangerous than a large one under such circumstances. The catheter was tied

into the patient's bladder, and allowed to remain. In the course of ten days I could pass a No. 10 instrument.

"It is worthy of remark, that in this instance the patient bore the presence of the catheter uncommonly well. A great difficulty is often met with in the circumstance of patients not being able to bear an instrument in the urethra for any length of time. It produces great distress, and brings on general irritative fever, but there was nothing of the sort in Barton's case, and hence we were able to open up the passage so rapidly. Now, as regards the practice adopted in this instance, there is no novelty in it; but I do not think it is often resorted to. I must confess, that the instrument was forced through the urethra, or it may have been pushed through the diseased tissues as near the urethra as possible; but the surgeon is not to be blamed for adopting this mode of practice under circumstances of a like nature. He must, however, be excessively cautious in what he is doing. After a stricture has been forced in this way, it is an admirable practice to keep an instrument in the urethra for some days if it can be borne, for the pressure of the catheter keeps it open, and causes absorption from the indurated tissue, just as pressure by means of a firm bandage effects the dispersion of the induration around an old ulcer.

"In a case of this kind the instruments of Mr. Thomas Wakley might be tried, and probably with success, if mere rapid dilatation would suffice; but, unfortunately, we cannot always depend upon it, for it will happen, that, after having rapidly dilated a stricture, there may be great irritation afterwards, and ere long matters may be as bad as before."

ART. 55.—*On Strictures of the Urethra.* By G. I. GUTHRIE, Esq.

(*Lancet*, June 7, 1851.)

[Mr. Guthrie gives the result of his experience in stricture in the following aphorismal form:]

1. A hard and elastic, or intractable stricture is never permanently cured by dilatation by the application of caustic, although it may be materially relieved by the regular periodical use of a dilating instrument.

2. That the division of an old, hardened, or elastic stricture through the perinæum is not unusually followed by a permanent cure, although it is always attended by immediate relief. The disease being apt to return unless a solid sound or a catheter is occasionally passed to prevent it.

3. That the operation of dividing the perinæum and urethra in such cases is sometimes attended by severe hæmorrhages, by fever, and is occasionally followed by fistulous openings, giving rise to much inconvenience.

4. That such division does, in some instances, effect a permanent cure.

5. That the division of the urethra through the external parts

should never be attempted in any portion of it anterior to the bulb, such operation not being necessary; for the narrowest stricture of the pendulous or moveable part may always be divided internally with much less comparative danger than by the external incision, inasmuch as the instrument can be guided through this part by the finger and thumb of the left hand of the surgeon with a certainty almost unerring.

6. That the stricture considered by all surgeons as the most important and difficult of cure—viz., at the termination of the bulbous portion of the urethra—may always be divided, when impassable, by a *straight* instrument, and, in general, more easily than by a *curved* one; the use of which is founded on the erroneous belief that the stricture is situated in the membranous part of the urethra, instead of being, as it is, anterior to it.

7. That the division of a stricture should, if possible, be effected by an instrument passed through it, and cutting from behind forwards, rather than from before backwards, although a combination of both methods will frequently be necessary to ensure success.

8. That the division of a stricture by these means will not always insure a permanent cure if more than the mucous membrane is implicated, unless such parts be divided also.

9. That in cases of intractable stricture, the mucous membrane, the inner layer of involuntary muscle, and the elastic tissue external to it, should be divided, when the operation is done from within, but not the outer layer of muscular fibres, which should remain as a barrier between the stream of urine and the common integuments of the external parts—an accuracy of division not always to be attained: whence, perhaps, the difficulty of effecting a permanent cure.

10. That when a permanent cure is effected in these cases, the divided elastic wall of the urethra is not reunited by a structure exactly similar to itself, but by common areolar tissue, rendering the part more dilatable under the pressure of the stream of urine; the formation of which dilatation can be aided during the progress of the cure by pressing on the divided part with the point of a solid instrument passed daily for the purpose of preventing, if possible, that contraction which always takes place during the process of cicatrisation; a proceeding which cannot be advantageously adopted when the parts are divided through the perinæum, lest it should encourage the formation of a fistulous opening, to which there is always a tendency.

11. That in cases of intractable stricture accompanied by one or more fistulous openings in the perinæum, in *young persons*, or of middle age, the operation through the external parts, or along the urethra, may be resorted to at the pleasure of the surgeon with an equal chance of success, provided the division of the obstruction or bank preventing the free passage of the urine be effectually divided, the *sine quâ non* of the operation.

12. That the operation within the urethra should always be preferred in *elderly* persons, particularly if somewhat stout or fat, as less likely to create severe constitutional disturbance; and if this operation

should fail from any cause it by no means interferes with the due performance of the other through the perinæum, which in serious cases then becomes imperative, as the last resource capable of giving relief.

ART. 56.—*On Operation for Retention of Urine from Inveterate Stricture, with a modification of the Perineal Section.* By JOHN SIMON, Esq., F.R.S.

(*Medical Times*, and *Gazette*, April 10 and 17, 1852.)

[In a Clinical Lecture delivered at St. Thomas's Hospital, Mr. Simon enters into the conditions of the urinary passages, which necessitate an artificial opening. These are thus enumerated and commented upon:]

(1.) All means of procuring natural emission of urine may fail. (2.) Constitutional symptoms may make it dangerous to temporise, by the endeavour to dilate the stricture. (3.) The urethra may have ulcerated at the seat of stricture, and allow extravasation of urine to occur, with its attendant mischief.

1. As regards the first condition, I believe it to be of the utmost rarity; simply, it has never driven me to the necessity of operating. The local state of stricture, which causes complete retention, is a compound one. Though the canal be so permanently small as to make urination very laborious, yet that which brings him to a dead lock is a temporary work. The mucous membrane is swollen by some additional congestion of blood, or the canal is obliterated by muscular spasm. And over this temporary aggravation we have great control. A full dose of opium,—aided, perhaps, by leeches to the perinæum and by the hot bath, or in some cases preceded by the action of a brisk purgative, will generally give relief; and thus, even if we cannot extemporaneously get a catheter into the bladder, we can re-establish the patient in his previous state of dribbling urination; we can insure that his bladder shall partially evacuate its contents; and we can gain time for that gradual dilatation of the stricture which will bring more complete and permanent advantage. With these resources in our hands, and with an expert,—but, above all, a gentle and patient, management of the catheter, I can promise that we shall scarcely ever find ourselves defeated in uncomplicated cases of retention of urine from stricture. Should that rare contingency arise; should our milder measures utterly fail; should the urethra remain absolutely impervious,—letting in no catheter, letting out no urine; then undoubtedly, as I have stated, this condition would establish a necessity—a legitimate, and imperative, and urgent necessity—for our making an artificial vent for the distended bladder.

2. The second specified condition for the performance of such an operation is a more frequent motive than the first. The stricture, though very close, may not be quite impervious; it may let enough urine pass to keep the bladder free from fatal distension; it may even (though this would be unusual) permit our smallest catheter to traverse it; yet, with all this, our patient may be dying. He is an

old man, perhaps, with a shattered constitution; he has been plagued with his stricture for years; it has been neglected or aggravated; his urine is fetid and full of pus; he has had constantly recurring rigors; his loins are painful and tender; every attempt at dilatation of his urethra gives severe suffering; his shiverings and sweatings have left him each day feebler; his weak pulse beats above 100 in the minute; his hands are tremulous; his tongue is getting dry; he is threatening to become typhoid,—breaking down under the prolonged irritation of his local disease. We may entertain no doubt that, with time, we could dilate his stricture; but here exactly it is, that time is an ally we cannot reckon on. A fortnight or three weeks would be requisite for our endeavour to have any success; and far within that period we should have nothing but the dead body to catheterise. Here, obviously, there is urgent need for immediate and complete relief,—for relief that shall at once put the man into a tranquil and painless state; and the establishment of an artificial outlet for his urine is the clear indication of treatment.

3. The third condition which I have stated to warrant the necessity of this proceeding, is that under which we most commonly adopt it,—where, namely, the urethra has given way behind the seat of stricture, and presents an aperture through which, at every contraction of the bladder, urine is effused amid the adjacent textures, exciting them to inflammation and gangrene. I need hardly say, that cases of this description are among the most urgent in surgical practice, and that the utmost promptitude of relief is requisite for the patient's safety. Though the stricture, so far as that goes, may be of a kind likely to yield to gradual dilatation, yet, pending this slow process, what is to become of the urine? Is it to continue its destructive course of effusion amid living textures? Manifestly not; and therefore the local treatment resolves itself under two heads: first, to adopt such a course, relatively to the strictured and perforated canal, as will prevent any further extravasation of urine; secondly, to make such incisions as may be requisite for discharging out of the infiltrated tissues all their fetid accumulation of urine, pus, and sloughs. In seeking to fulfil the former of these indications, we find it necessary (as under the conditions previously considered) to make an artificial passage for the urine; and the operation, as I have said, has its most frequent necessity in the condition here adverted to. Out of six cases, which I shall presently notice, in which I was obliged to perform the operation in question, five were cases in which the urethra had given way, and extravasation of urine was in progress.

And now, suppose the necessity to be established for our giving an artificial passage to the urine:—suppose one of the three conditions to be present which I have stated; that we cannot procure any discharge whatever by the natural channel; or that our patient is suffering urgent constitutional distress from the insufficiency of such relief as we have procured him; or that the perinæum and genitals are beginning to swell with extravasation of urine;—now, what course have we to adopt?

The operation which for a great many years has been prevalent here (and, indeed, in most London schools of surgery,) has been the

following:—(1), a catheter or sound has been passed up to the seat of stricture, at or near the bulb of the urethra; (2), a long cut has then been made in the raphé of the perinæum, reaching down to the urethra, and opening it behind the seat of stricture; (3), the urethral incision has been prolonged forwards, towards the point of the catheter or sound, so as to split open the contracted portion of the canal; and finally (4) all impediments being overcome, a large catheter has been conducted along the urethra into the bladder, and there secured by appropriate bandages.

This operation will be found fully described in Mr. South's translation of Chelius, and is spoken of as the practice of the Borough hospitals for the past thirty or forty years. And, if we wish to see the operation in its most favorable aspect, we cannot do better than observe it in Mr. South's hands, who has had great experience in the proceeding, and who executes it with all the care and patience which are indispensable for its success.

Professor Syme, of Edinburgh, who is a great authority in such matters, speaks of this operation as "protracted, uncertain, dangerous, and unsatisfactory." Looking to its average performance, I must say my experience would justify this censure. It is *protracted*, for the patient undergoes severe manipulation during a period, of which the mean would be twenty to thirty minutes. It is *uncertain*, for the division of a stricture or strictures to which one is so imperfectly guided, cannot be accomplished with facility; nor can one feel sure, under the most favorable circumstances, that one's scalpel has hit the exact line of a canal contracted (perhaps for an inch of its length) to such narrow dimensions as scarcely, if at all, to admit the smallest catheter. It is *dangerous*, because (in addition to the sources of risk just adverted to) large hæmorrhage not unfrequently contributes to exhaust the patient; and further, because in many cases (as where the urethra is contracted throughout its whole spongy portion) a catheter cannot be maintained in the passage ,without prolonging that state of pain and irritation which already have set life in jeopardy. And *unsatisfactory* it must be on all these grounds. For what can be more so, than to conclude a severe and dangerous operation with uncertainty, as to whether one has accomplished that very object for which the severity and the danger were encountered?

These objections apply to the proceeding as practised by the best (I mean the most careful) operators. In other than good hands, it is a very horrid affair: metallic instruments are thrust in all directions; they leave the canal at one place, and re-enter it, by perforation, at another; or they pass up to the hilt—one shudders to think where!—and draw no water; the rectum, the prostate, even the bladder, undergoes injury in these violent efforts, and the patient is eventually sent to bed, it may be with his bladder unemptied, having his chance of cure sensibly diminished by the infliction of so much unnecessary mischief.

We cannot be surprised that many surgeons have taken refuge from the precarious chances of this operation, in the comparatively simple and secure process of tapping the bladder by the rectum or above the pubes. I shall presently describe the operation which, generally

speaking, I consider a far preferable alternative even to these. But, before examining their comparative merits, I have still something more to say in respect of the last.

Within these few years, Professor Syme has introduced a method of dealing with obstinate strictures, by dividing them on a director previously passed through the constriction; and we may ask whether the adoption of this manœuvre would be applicable to the cases we are considering, so as to remove the objections I have expressed to the operation of dividing the stricture without any such assistance? I think not. The cases heretofore treated by Mr. Syme's operation have not been cases where the primary consideration is to give immediate relief to a distended bladder, or to provide against advancing extravasation of urine; and in cases such as these there are generally circumstances which would render the director inadmissible. If the urethra is impervious to a small catheter, it is not likely to yield to this other instrument; if the canal has ulcerated, so as to communicate with infiltrated and sloughing tissues, or is riddled with false passages, the director would be not unlikely to prove a treacherous guide. Here and there one might find a case in which (supposing division of the stricture to be our desideratum) Mr. Syme's principle would admit of application; but, speaking generally, I may repeat that his proceeding relates to quite a different class of cases.

But, if that "protracted, uncertain, dangerous, and unsatisfactory" operation, which I have described, could admit of serviceable modification by Mr. Syme's proceedings, there is yet another reason, I think, which would induce us to reject it.

The operation held its ground because of its alleged completeness. The notion of dividing (and therein *curing*) the stricture, at the same moment as one gave relief to the distended bladder, was indeed charming. But, of late years, surgeons have discovered that this seductive completeness had in it a practical fallacy. The division of the stricture was the sheerest superfluity. Let the bladder be relieved any how,—by the perinæum, by the rectum, by the pubes; merely let the stricture for a while be undisturbed by the constant irritation of urine urged against it from behind, and there speedily occurs a spontaneous perviability of the canal. The stricture wants no cutting. It loosens itself.

So remarkably does this effect belong to the withdrawal of pressure from the stricture, that it arises, not only when the surgeon has made an artificial outlet for the water, but also under far less favorable circumstances; namely, where the urethra has given way behind the stricture, and where the bladder expends its chief expulsive force in driving the urine into surrounding textures. "The first effect of this mischief (says Sir Benjamin Brodie) is to relieve the patient's sufferings; there is no more straining, and the spasm of the stricture, no longer excited by the pressure behind, becomes relaxed, so as to allow some of the urine to flow by the natural channel." Further, in the very numerous cases where the endeavour to divide a stricture has been defeated by the difficulties I have adverted to, and where (contrary to the performer's intention) the operation has not advanced further than the stage of cutting into the bladder or urethra

somewhere behind the obstruction, the same loosening of the stricture has been observed to ensue, as though it had actually been divided.

Surely, it cannot be desirable to incur difficulties and dangers in attempting to divide a stricture, when the same advantages spontaneously arise without that division being accomplished.

These considerations have led me to the modified perinæal operation, which I have performed in various instances, and which consists simply in this: I open the urethra by puncture (or by very small incision) immediately in front of the prostate gland. I run a short elastic catheter along this wound to the bladder. I leave the stricture quite untouched for ten days (more or less) during which the urine flows entirely by the perinæal catheter. At the end of this time, I find the stricture sufficiently relaxed for me to begin its dilatation with a middle-sized instrument; and I thus obtain all the advantages assigned to the severer and more difficult measure, while adopting an operation of extreme slightness and security.

I have already intimated, that many surgeons, feeling the risks and difficulties which are inseparable from the ordinary perinæal operation, have chosen rather to tap the bladder, in such cases as we are considering, either above the pubes or by the rectum. Obviously on the principles which I have stated either of these proceedings might give very satisfactory results. The bladder would be effectually emptied, and the stricture relieved from irritation; supposing the urethra to have given way, diffusion of urine would be prevented; and neither of these operations can be considered very difficult or very dangerous.

If, therefore, my choice lay between the ordinary perinæal operation and these other expedients, I should not hesitate to prefer one of the latter. But the modified perinæal operation which I advocate is still simpler and safer.

I admit, for instance, that tapping the bladder through the rectum is not a very difficult or very dangerous operation. A man of ordinary skill can hardly bungle it. Yet it is not quite so simple a matter as driving your trocar into a hydrocele. It requires some practice and dexterity. I have known an able surgeon in attempting it, make two successive stabs; the first *went by the side* of the bladder, the second *transfixed* it. And I should doubt whether, even under the most skilful management, the peritonæum would always be so safe from injury as the advocates of the operation believe.

But assuming for argument's sake, that the manipulation shall never miscarry by any such slips as these, I can still scarcely approve of the operation. To bore a hole through the rectum would seem, at first blush, a roundabout way of emptying the bladder. It strikes me as an awkward and unworkmanlike proceeding, to involve a second viscus unnecessarily in the attempt to relieve a first. One would wish to minimise the injury of one's operation; and, if one can relieve the bladder equally well without wounding the rectum,—if one can accomplish one's purpose by a direct cut through the common integuments, or little more, surely one would argue *primâ facie* that the rectum should be let alone. For the wounding of the bowel cannot be a matter of indifference. The track of the trocar between the

seminal vesicles must be the seat of irritation,—not often, perhaps, to a serious extent, but certainly sometimes. Occasionally, no doubt, an abscess forms there, aided by a little infiltration of urine; and from such a beginning as this very multiplied mischief might arise and continue. I understand there died in this hospital, not long ago, a patient, who, at some previous time, had undergone elsewhere the operation in question; and in whom the irritation occasioned by it had never subsided. There had apparently been formed (in the manner just suggested) an abscess between the two openings; urine continued to flow through the rectum, with extreme discomfort and tenesmus; and the man's health was undermined by this continued suffering and irritation. I repeat, therefore, that the rectal operation, as compared with the ordinary perinæal section, presents unquestionable advantages; but, as compared with the modified perinæal operation, it must be considered, I think, to have the disadvantage of inflicting unnecessary injury, and incurring unnecessary risks.

The supra-pubic tapping of the bladder is even easier of performance than the rectal operation, and has some other arguments in its favour. Indeed there are cases, though not such as we are now considering, in which the bladder cannot be relieved by any other proceeding. Such are the cases in which invincible retention of urine is occasioned by tumours of the prostate; for here, obviously, no perinæal incision would carry us beyond the obstruction, and the morbid growth would render tapping *per rectum* difficult or impossible.

But, as respects cases in which our necessity to operate depends on stricture and its consequences, I cannot think the supra-pubic puncture a desirable proceeding. The distance to which the contracted bladder retreats, so soon as its contents are discharged, is a matter of serious inconvenience. The areolar tissue between the bladder and the abdominal wall may easily get irritated by soakage of urine. The opposed edges of the recti would, in any such case, be an obstacle to the escape of the unhealthy accumulation. Further, notwithstanding the facility of the puncture, mischances have happened in its performance; and, both in the operation and afterwards, the posterior wall of the bladder has suffered from the trocar or the canula.

Reviewing the objections I have briefly stated, I cannot but give a decided preference to the modified perinæal operation, in all cases which admit its execution. The point of the urethra selected for the puncture is definite in its position. It is readily reached from the surface of the perinæum. No important parts intervene. The subsequent escape of urine is direct. The position of the catheter causes little inconvenience. The perinæal incision necessary for reaching the urethra is in nearly all cases required by accumulations of pus and extravasated urine. In such cases nothing is wanting to relieve the bladder but to deepen the incision into the urethra itself—a proceeding surely both milder and more obvious than if, after cutting deeply into the perinæum for pus and extravasated urine, one were to start *de novo* with a trocar, to tap the bladder by the rectum or above the pubes.

[These observations are illustrated by the details of six cases,

followed by the subjoined remarks on the mode of performing the operation.]

As regards the mechanical details of the operation, I need scarcely add to what I have already said, beyond recommending the practice on the dead body, at every convenient opportunity, of the art of reaching the urethra at its membranous portion without the guidance of a staff. On our power of doing this depends our right to attempt the operation I have described. But what can be easier? The canal which we wish to penetrate is not a small one; often, indeed, it is considerably dilated in consequence of the diseased condition which obliges us to operate; its position is invariable, and in every point of its course can be readily explored from the surface. The bulb is subcutaneous. The prostate we feel within the anus. The length of canal between these two points is not an inch; its course straight in the median plane. Any difficulty which might be occasioned by the bulging of the perinæum with pus or extravasated urine ceases, of course, with our first incision, which (in such cases made with proper freedom) gives immediate vent to the confined fluid, and enables us to proceed with facility. Often in thin subjects, and where the urethra has not given way, the distension of this canal, as the patient strains to make water, will render it so evident, that the operation may resolve itself into a mere puncture with a lancet. In the less easy cases, where our subject is fat, or the perinæum deep and infiltrated, there is really nothing to deserve the name of difficulty. We make a sufficient cut in the raphé, terminating a little in front of the anus, and sinking as deep as may be requisite into the cellular tissue. We may then, in the following way, arrive at the point of the urethra which we wish to penetrate. Pass the right fore-finger into the anus; ascertain, through the wall of the bowel, the position of the prostate; bring the finger forward till it discovers the anterior extremity or apex of the gland; let it just pass this spot, and rest (nail upwards) pressing with its point immediately in front of the gland. Of course, if the parts were transparent, we should now see our finger indenting the membranous portion of the urethra at that hindermost point of its course where we purpose to puncture it. Now pass the left fore-finger (nail upwards) into the wound; advance it till (with the guidance of the finger in the rectum) it falls against the apex of the prostate; there we so arrange it, that the middle phalanx presses back the rectum; the last phalanx lies along the prostate, with the tip of its nail indicating the spot at which the urethra emerges. Finally, withdrawing our right fore-finger from the anus, and resuming the bistoury, we run this along the left fore-finger, till we penetrate the canal on which it rests, and immediately follow it by the short elastic catheter which we intend leaving in the bladder.

It will be observed that the cut is made into the urethra, just at the confines of its prostatic and membranous portions; a spot which is posterior to the seat of stricture, and is easy to hit, from the definiteness and invariability of its position.

With a little practice on the dead subject, we shall readily acquire the knack of doing this operation in the natural condition of the parts

with a single puncture; and we shall find that disease alters those natural relations far less than is commonly stated. But in the most difficult cases, if we carefully determine through the rectum the exact point at which the urethra emerges, we shall complete the operation in less time than is taken to describe it.

ART. 57.—*On the Use of Chloroform in Retention of Urine from Stricture.* By R. MACKENZIE, Esq., F.R.C.S.E., &c.

(*Monthly Journal of Medical Sciences*, March 1852.)

The author observes in a clinical lecture on stricture, that in the treatment of ordinary stricture of the urethra, the use of chloroform is not called for. On the contrary, its employment, where no unusual irritability of the urethra exists, must evidently be attended with disadvantage, as the feelings of the patient form, to a certain extent, a guide to the surgeon in passing the instrument through the constricted part of the canal.

It is in the irritable form of stricture, accompanied with spasmodic contraction of the muscular fibres surrounding the urethra, that advantage is occasionally derived from the use of chloroform. Cases of this kind, he remarks, occur, where, every now and then, during the treatment by dilatation, the progress of cure is checked for a time,—a bougie of small size is tightly grasped in the stricture, which a day or two previously easily admitted a larger instrument. This difficulty appears to be caused by spasm of the muscular fibres surrounding the canal; and it is in such cases that the use of chloroform decidedly facilitates the introduction of instruments.

But it is when retention of urine occurs in cases of this kind, that the advantage of chloroform is more prominently marked, and of which the simple details of the following case give undeniable proof:

James Pentland, æt. 23, admitted into the hospital October 19, 1851, on account of stricture, with retention of urine. He stated, that for the last four years he had served in an infantry regiment, during the greater part of which time he had suffered from stricture of the urethra, on account of which he had been discharged, as unfit for military duty, a few months previously to the date of his admission into the hospital. He had repeatedly, whilst in the army, suffered from retention of urine, which had been relieved occasionally with great difficulty, and with very small-sized catheters, at other times with instruments of larger size.

During the last month, his difficulty in making water has increased; and on the day before his admission, he again suffered from retention, and the surgeon under whose care he had latterly been, and who had, on various occasions, passed instruments into his bladder, failed in introducing a catheter. The patient was then sent to the hospital, where, after a good deal of difficulty, the author succeeded in passing a small catheter (No. 2) into the bladder, and removed a large quantity of urine. The catheter was tightly grasped, and an induration was felt by the finger at the seat of stricture—the bulb. The catheter was retained in the bladder for two days, when it was withdrawn, and he was able to pass his water easily in a small stream.

On the 24th, at the hour of visit, the patient was found again suffering from retention. A large quantity of urine had accumulated, the bladder forming a prominent tumour, which reached nearly as high as the umbilicus. On attempting to introduce a catheter, the author found that he was unable to pass the smallest sized instrument through the stricture. No. 1 was passed within the constricted part of the canal so far that it could not be withdrawn without using a considerable degree of force; but, after repeated trials, he was foiled in reaching the bladder.

Under these circumstances, the author was about to request the assistance of Mr. Syme, who was in the hospital at the time, when it occurred to him that the case was a good one to test the existence of muscular spasm by the use of chloroform. After inhaling the vapour for a few seconds, the patient became much excited, and struggled a good deal; but no sooner had the stage of excitement passed off, and the relaxed state of the muscles and stertorous breathing evinced the full action of the anæsthetic, than *the urine was expelled in a forcible and continuous stream* by the side of the small catheter, the point of which had been retained within the constricted part of the canal. The catheter was now immediately withdrawn, which laid loosely within the canal, and the author at once passed No. 2 into the bladder with perfect ease.

After emptying the bladder, and before withdrawing the catheter, the author requested one or two of the gentlemen who were present, and who had felt the tightness with which the smallest instrument had been grasped, to satisfy themselves that the larger catheter now lay loosely in the canal. The author believes, indeed, that Nos. 4 or 5 might now have been passed as easily as No. 2.

No further difficulty occurred in the treatment of the case. The contraction of the canal was overcome by gradual dilatation, and the employment of chloroform was not again required. On the 27th, No. 2 only could be passed. On the 29th, Nos. 2 and 3. On the 1st of December the patient was dismissed from the hospital, No. 16 having been passed two or three times before his departure. He returned to the hospital two or three times afterwards, when the house-surgeon, Mr. Moir, found no difficulty in passing the largest sized bougie. His urine was passed in a full stream, and his former symptoms were entirely relieved.

In recording the above case, the author desires it to be understood that he does not advocate the employment of chloroform as a general rule, even in those cases of stricture where considerable irritability of the urethra exists; but he wishes to call attention to the distinct proof of the constriction in this case being much increased by muscular spasm, and of this being at once relieved by the action of chloroform, as well as to the fact, that the bladder retained its expulsive power whilst the retentive muscular fibres were relaxed.

The author also notices the fact, that the involuntary evacuation of the bladder is a frequent effect of the inhalation of chloroform, which is not difficult of explanation. The tendency of the bladder to contract, when moderately distended with urine, is resisted, whilst the individual retains his senses, by an effort of the will, by the contraction

of voluntary muscular fibres. Under the full influence of chloroform, the voluntary muscles are paralysed, but the involuntary muscles retain (unless the inhalation is carried to a poisonous extent) their contractile power. The muscular movements of respiration and circulation continue. The contractions of the uterus in parturition are only partially, if at all, impaired; the bladder in the same way retains its expulsive power. In the operation of lithotomy, we see the urine expelled through the opening of the neck of the bladder with the same force when the patient is in a state of complete anæsthesia, as when chloroform has not been inhaled. The organ, though deprived of sensation by the action of chloroform, retains its sensibility to its natural stimulus, and retains, at the same time, its contractile power. The muscular fibres, which, in a state of health, resist, through an effort of the will, the expulsion of the urine, are in irritable stricture spasmodically contracted. Under the action of chloroform this subsides, and the bladder is able to expel its contents.

ART. 58.—*On the Stricture Dilator.* By BARNARD HOLT, Esq., F.R.C.S.

(*Lancet*, Feb. 7, 1852.)

[Another new instrument, or rather a modification of one invented by M. Perrève, has been designed for the dilatation of urethral stricture by Mr. Barnard Holt. Of this instrument he observes:]

The surgeon possesses, in this instrument, a means whereby dilatation can be carried to any extent; yet this advantage is not to be abused, inasmuch as many circumstances may arise where extreme dilatation would be attended with great disadvantage. Thus, in cases where great spasm is present, the irritability of the urethra being evinced by persistent contractions and attempts to expel the instrument, the dilatation must be gradual, and only continued in obedience to the feelings of the patient. The rule of never using violence holds good here as elsewhere. In no case in which I have used the dilator has there been anything further than slight smarting on the next attempt at micturition; no rigors, no retention of urine, or stricture fever, which, under the old system, so frequently attends the attempts to pass a second and a larger bougie, has resulted from its introduction. I cannot help anticipating its general adoption. It might be urged that rapid dilatation is not so permanent as gradual, but this is surely a false argument, inasmuch as having by rapid dilatation gained a certain size of passage, that size can be easily maintained, and certainly with less inconvenience than is occasioned by the protracted measures we are at present compelled to employ. Yet, were it only for one circumstance, I believe preference will be given to the dilator —namely, the facility of increasing the size, *without withdrawal of the original instrument*, and without any other being passed *in immediate contact with the urethra*,—thus obviating the present necessity of a second and frequently unsuccessful attempt at introduction.

In many cases of old cartilaginous obstructions, where the ordinary bougie accurately fits the diameter of the stricture, considerable pain is experienced in its withdrawal, from the tenacity with which the

bougie is grasped by the stricture; and occasionally some amount of force is necessary to remove it. This difficulty is entirely obviated in the employment of the dilator, by the gradual and easy retraction of the tube, by which the blades of the dilator become immediately closed to the diameter at which it was originally introduced.

In conclusion, the author suggests that the stricture dilator is capable of effecting all that can be done by the ordinary bougie, and, in addition, has the following advantages:—

1st. The dilator, being introduced in a small compass passes the stricture with greater facility and less pain to the patient.

2d. It can be increased from one to six, or six to twelve sizes, without removal from the bladder, thus entailing upon the patient only one introduction at each visit.

3d. The means of increase is effected without more than one instrument coming in contact with the urethra.

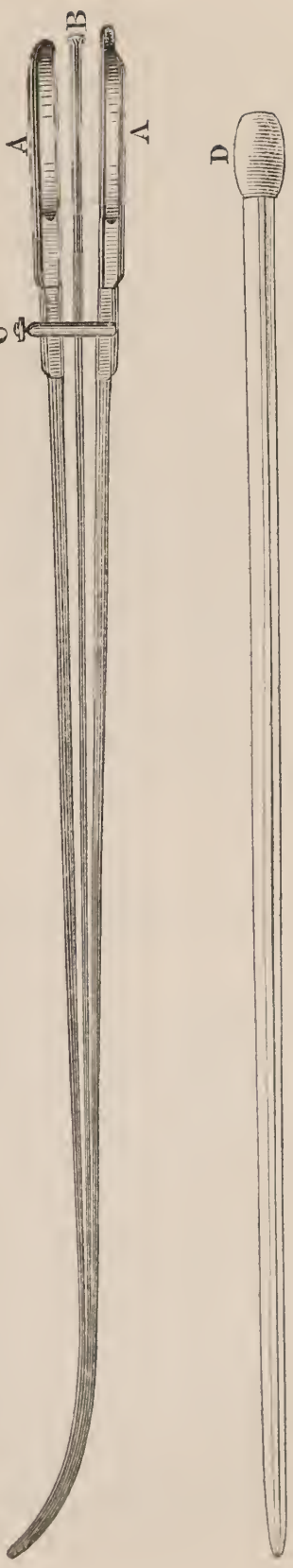
4th. There is no possibility of the dilating tubes lacerating the urethra, or escaping from between the blades of the dilator.

5th. The dilatation can be increased, or relaxed, and accurately regulated according to the feelings of the patient, *without withdrawal of the original instrument.*

6th. The increase is very gradual, whatever sized tube may be introduced, in consequence of the length of the upper and lower blades, and the conical form of the extremities of the tubes.

7th. In the operation of lithotomy, it affords facilities for the introduction of a large and straight staff, by a slight modification of the form and size of the tubes.

Description of the Dilator.—The dilator consists of an upper and a lower grooved blade welded at the



A, A. The upper and lower blades.
B. The directing-rod.
C. The regulating screw.
D. The dilating tube.

The Engraving gives but an imperfect idea of the *Dilator*, the curve being too short; and the directing-rod ought not to have any ornament at its extremity.

point, and fixed in a handle which admits of dilatation. Through its centre, or between the two blades, a wire or directing rod is fixed, upon which the tubes pass, in order to secure them from slipping from between the blades of the dilator. A screw is fixed in front of the handle, which regulates the size to which the instrument should be increased. The tubes are made of silver, and range from one to twelve, conical at their extremities, for the more gradual dilatation of the stricture, and in order that but little strain should be exercised on the extremity of the dilator. The dilator being once introduced, the screw should be partly removed, according to the sized tube it is to be desired should be used. The tube is then passed on the directing rod, between the blades of the dilator, and very gently pushed forwards, the dilator being firmly held in the left hand to prevent any jerking, by which unnecessary pain might be caused. The tube, having been gently passed to the extremity of the dilator, is to be permitted to remain until any smarting has subsided, when it may be withdrawn, and, if necessary, a larger tube, introduced—the surgeon exercising the same caution as before. In the generality of instances it is desirable that the tubes should not be increased more than three sizes at one visit, otherwise constitutional symptoms might arise from the too violent pressure. The dilator being withdrawn, care should be taken that it is properly cleaned and wiped dry, as, were the directing-rod to become rusty, some future inconvenience might be experienced in the passing of the tubes. The first dilator is capable of increasing the size from one to six, the second from six to twelve.

The dilator is made by Messrs. Philp and Wicker, of St. James's Street.

Art. 59.—*Practical Observations on the Operation for Lithotomy.* By W. Fergusson, Esq., f.r.s.

(*Medical Times*, Dec. 20, 1852.)

[Mr. Fergusson briefly alludes to the history of the lateral operation and its modification in the hands of Mr. Liston. He then speaks of his own mode of performing it as follows:]

In the first place, I always make a point of introducing the staff myself when I am going to operate; this should not be left to another person, for if any mishap occurs, the fault is sure to be thrown upon the unlucky man who holds the instrument. The operator himself ought always to be responsible for every step of the operation. When the staff is introduced the patient should be tied up, but not before The surgeon now takes a glance at the perinæum, introduces the finger into the rectum to ascertain the position and size of the prostate gland and the condition of the gut itself, which ought to be unloaded previously by an enema. Then, having all his instruments by his side, the principal part of the operation is proceeded with. The knife I use is a scalpel, with a cutting edge only half-way down,—such, indeed, as Mr. Liston used, and which goes under his name; and, curiously enough, I have the opportunity of showing the very knives which he was constantly in the habit of using some twenty years ago.

The incision is now commenced, about one inch and a-half in front of the anus on the left side, and carried downwards towards the ischium to the extent of three inches, or even four in a fat subject. This incision divides skin, fat, and superficial fascia. Then it is carried on between the erector penis and the accelerator urinæ; and, in the triangular space bounded by these muscles and transversus perinei, the operator, at the second or third incision, can place his finger on the staff, and feel the groove through the membranous portion of the urethra. He now puts the point of the knife into the groove, and pushes it along until it has passed through the prostate, keeping its cutting edge outwards and a little downwards towards the ischium; then, generally, there is a gush of urine, by which he learns that the blade has got into the bladder. The finger is then carried into the wound,—the tissues gradually yield before it,—and, if the operator has a nice touch,—which is so necessary here,—he will be able to distinguish the mucous membrane of the bladder from the rest of the wound. Having now got the finger into the neck of the bladder, he cautiously dilates the opening, by moving his finger round, and at the same time feels for the stone; these objects being attained, the staff is taken out and the forceps being slowly introduced as the finger is withdrawn, the stone is seized and extracted. Now, the peculiarity in my own operation is this, that I make the smallest possible opening in the neck of the bladder, so as just to admit the forceps into it. Many lithotomists make a very free opening; and some use this instrument, which is termed a blunt gorget, and pass the forceps along its groove; but I prefer using my finger as a guide, withdrawing it gradually as the forceps makes progress; then, just as the blades enter the bladder, a gush of urine takes place, at which instant I open them, and, by a slight twist of the wrist, usually catch the stone at once, when, with the utmost care, I draw it gradually downwards until the tissue yields, and it is removed. As I said before, some advise free incisions; but I only notch the prostate. I consider it a much safer plan to make a very limited cut in this part. I believe the data we have of the operation go to show, that the most successful lithotomists were those who made small incisions into the neck of the bladder. Martineau made a small incision, dilating it afterwards; so did Liston. If necessary, the opening can be enlarged; but it may be considered a much safer plan to make a small wound with the knife, and then to stretch it well with the finger; it is extraordinary how the notch will enlarge by dilatation.

Perhaps the chief difference between Mr. Liston's practice and my own consists in the treatment immediately after the operation, and this is in reference to the employment of the tube. I used it in all my early operations, but I had frequent occasions to think that it caused both physical and mental discomfort. The patient had an idea, in wearing the tube, that the whole of the operation was not finished; consequently I, although an Edinburgh pupil, ventured to differ from the surgeons there upon this point. I left the wound entirely to itself, as was the custom with Cheselden, Martineau, Key, Green, and other eminent lithotomists; and I was so well satisfied with this plan, that I now never use this instrument. My friend and former house-surgeon

at Edinburgh, Dr. Richard Mackenzie, has recently given up the use of the tube, and he writes me, that he is well pleased with this practice.

Art. 60.—*Remarks on Operations for Impassable Stricture of the Rectum.* By S. B. Curling, Esq.

(*Observations on Diseases of the Rectum*, p. 106.)

[Two operations are recommended in this disease; one, the opening of the colon in the left groin; the other, opening the bowel in the lumbar region. Mr. Curling thus speaks of their relative merits:]

A careful consideration of the advantages and disadvantages of the two operations, leads me to give the preference to the former. I do not ground this conclusion upon the tables of Amussat and Vidal, because I do not attach much value to them. The cases of Littrè's operation are not only limited in number, but in several of them the colon was not opened in the left groin, the division of the peritoneum being the only circumstance in common. Nor do the tables afford information of the period of constipation, or of the extent to which the viscera were disturbed in the operation. Callisen's operation is not only difficult of execution, but the wound is necessarily of large size, especially in stout people. But it is not so much for these reasons that I am indisposed to adopt it, as in consequence of the operation leaving the patient exposed, afterwards, to risks and annoyances, which are in a great measure avoided when the colon is opened in the groin. Thus I find, in the published account of several of these cases, that the artificial anus in the loin had a strong disposition to contract, so as to interfere with the passage of the fæces, and that repeated dilatation was necessary to secure the patency of the opening. It is also extremely difficult to adjust any apparatus to prevent the continued escape of flatus and fæces; and as the orifice is without the observation of the patient, he becomes dependent on the assistance of others. These serious inconveniences, if experienced at all, are much less so when the aperture is in the groin. The patient can attend to the part himself. The aperture does not show the same disposition to contract, and it admits of being closed by a well-adapted truss. These advantages, so important to the comfort of the patient, are by no means counter-balanced by any increased risk in opening the peritoneum. The operation is easily performed, and as no exploratory attempt is necessary to relieve the obstruction, a very small opening in the peritoneum is sufficient for the object in view. Even Callisen's operation is not entirely free from risk of peritonitis from disturbance of parts; and the magnitude of the incision probably renders the danger to life, from its performance, quite as great as that resulting from the operation in the left iliac region, carefully performed.

The abdomen may be opened in the left iliac region by a perpendicular incision about three inches in extent, commencing two inches above Poupart's ligament, and an inch external to the epigastric artery. The fibres of the abdominal muscles being cut across, will help to keep the wound open. The peritoneum being divided, the

distended colon will immediately protrude at the wound. A curved needle, armed with a silk ligature, being passed through its coats above and below to prevent its receding when emptied, the bowel may be opened for the space of an inch between the retaining ligatures.

Art. 61.—*Treatment of Spermatorrhœa.*

Mr. Henry Thompson has proposed a modification of Lallemand's caustic bougie, the application of which is, in his opinion, uncertain as to its effects, often causing more irritation than is either requisite or innocuous. He suggests, in lieu of the solid caustic, the application of solutions of various strengths, by means of the instrument which he thus describes:—

It consists of a curved canula, resembling a No. 9 or 10 catheter. Within this is a strong stilette, at one end of which is a well-fitted piston, while the other protrudes in the shape of a handle from the outer extremity of the canula. Immediately below the piston is a piece of sponge an inch long, and fitting the canula; at one end of this is an oval bulb forming the end of the canula; at the other, nearest the piston, is a metallic plate. (See Diagram.)

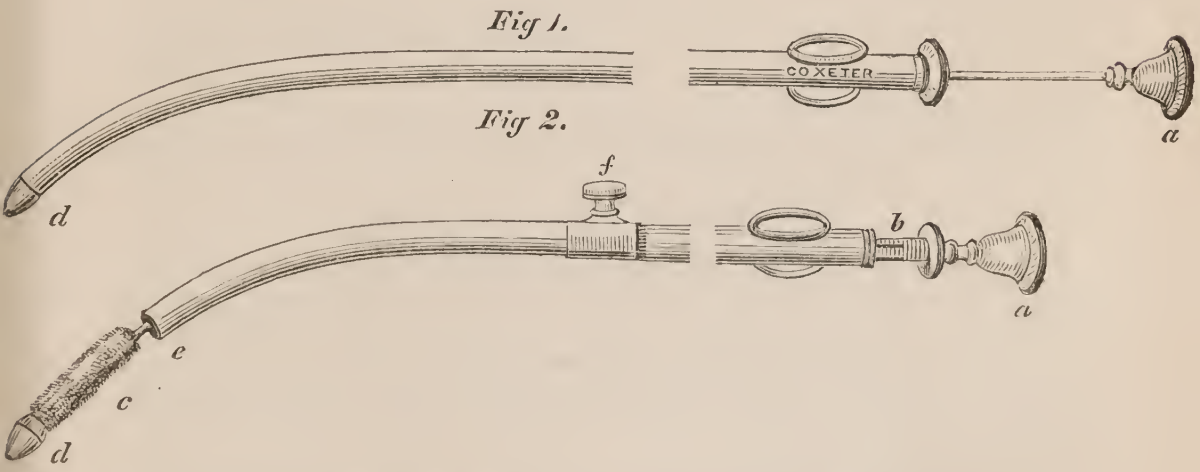


Fig. 1. The instrument closed. Fig. 2. The instrument open.

a. Stilette and handle, to the opposite end of which the piston and sponge are attached. *b*. Screw, which clamps the stilette when closed, as in Fig. 1. *c*. The cylinder of sponge which contains the solution. *d*. Oval silver bulb, which closes the canula. *e*. End of the piston just seen, the sponge being protruded to its utmost extent. *f*. Moveable slide.

This sponge is charged with the solution to be employed, and then drawn within the canula. The instrument is then introduced as in the case of Lallemand's caustic holder, and when opposite the membranous portion of the urethra the sponge is again caused to protrude and rotated by a motion of the handle. It is again withdrawn into the canula and the instrument is removed.

[In the 'Medical Times' of February 14th, the priority of claim to this invention is maintained by Mr. H. Smith.]

Lancet, Jan. 24.

Art. 62.—*Hydrastis Canadensis in Gonorrhœa.*

[Dr. M'Cann (U. S.) recommends this plant in blenorrhagia. He says:]

My experience, however, in the administration of it, though not extensive, is yet sufficient to warrant me in soliciting a trial of it by those having more opportunity of testing its curative powers than I have. I have used it in several cases in various stages of the disorder, and in *every case* with the most satisfactory results; more especially with males than females. I was led to its use by noticing its well-known sanative properties over inflammations of mucous and epithelial structures, such as aphthæ of the mouth, &c. The ardor urinæ, and discharge of mucus, has been entirely suspended in every case in from twenty-four to seventy-two hours. In some cases I used the balsam copaiba, in others injections of infusion of the hydrastis alone, but with about the same results, a perfect and *permanent* eradication of the disorder.

I have varied the strength to suit the case in its different stages, but as a general rule I have used about one drachm of the dried root to the pint of infusion—injecting a syringe full three or four times a day.

New York Journal of Medicine, Nov. 1851.

Art. 63.—*Treatment of Obstinate Ulcers by the Internal Use of Tincture of Cantharides.* By J. Tart, Esq.

(*Prov. Med. and Surg. Journal*, Oct. 15, 1851.)

In a case of extensive ulceration in a broken constitution, after the failure of various plans of treatment, Mr. Tart gave ten drops of tincture of cantharides three times a-day, with marked benefit. In three days from the commencement the sores began to contract, healthy lymph appeared round the edges, and vivid granulations started up. In a fortnight the ulcers were quite healed. On this case the author remarks:

"Such was the progress and issue of a case that had baffled every previous treatment employed. It affords one of many examples I could bring forward of the great utility of cantharides in indolent ulceration, dependent either upon atony of the engaged parts, or system generally.

"In 1845, while resident in Burmah, my attention was directed to the treatment of the ulcers met with in that country, and which had long been found difficult to heal by different medical gentlemen stationed upon that coast. I drew up a paper, exhibiting the appearances presented by the different ulcers, and the states of constitutional derangement with which they were identified, and in which I had employed the tincture of cantharides with marked success. The paper alluded to, backed by several cases treated by different medical friends, was forwarded to the Madras Medical

Board, who ordered it to be circulated throughout the medical service of the Madras army.

"A few extracts from the paper here referred to will show the characters of the ulcers where I found the tincture of cantharides useful:

"1st, Where the granulations were exuberant, but pale, weak, and flabby.

"2d. Where there was deficiency, or total absence of granulations, the ulcers being deep and scooped out, with raised and indurated edges.

"3d. Where the granulations were not defective, but cicatrizing irregularly, sometimes in the centre, at other times on one side, the lymph which was thrown out and organised one day being absorbed the next."

SECT. IV.—RARE SURGICAL CASES.

ART. 64.—*Simultaneous Dislocation of both Humeri.*

[The following cases of this rare accident have recently been recorded. Mr. Thompson, of Brandon, says:]

My attendance was requested at an inn in this town upon Mr. Samuel Pratt, a butcher, who resided in a neighbouring parish. I found he had been thrown from his cart, and, as he described it, fell head downwards, pitching upon his hands. He was suffering great pain, with arms fixed, and an attendant supporting each arm, his hands being quite numbed, being a remarkably short, thick, muscular man. I at first felt some hesitation in deciding the nature of the injury—this attributable to my never having at that time heard of a like case. I eventually decided the injury was dislocation, and reduced them both in the ordinary manner. After bandaging him up, I had him conveyed home; and calling on him the following day, he told me he had been visited by his family surgeon, to whom he described the injury, who, owing to the unusual case, did not believe such could have taken place, but, as we are aware, the patient must receive credence for his belief. The peculiar jerk, when the bones pass into their socket, with an instant relief to his sufferings, made such an impression upon his mind, that nothing could convince him to the contrary. His case ended in due time with the perfect use of both arms.

—Mr. Charles Webber also records the case of an Irish labourer, of large frame and muscular development, who was brought into Guy's Hospital at three a. m., in December, 1836. The accident for which he was admitted occurred by falling off a stack of wood, in such a manner that his arms were struck upwards in his descent. The left humerus was thrown into the axilla; the right under the clavicle. He also had fracture of the thigh. The dislocations were readily reduced.

Lancet, April 17 and 24.

ART. 65.—*Five Calculi Removed by Lithotomy, each containing a Field Bean as a Nucleus.* By Dr. MACKENZIE.

(*Monthly Journal of Medical Sciences*, Jan. 1852.)

[The following remarkable case occurred in the Edinburgh Infirmary:]

A labourer, æt. 46, was admitted with the usual symptoms of stone. On examination the presence of more than one calculus was ascertained. The lateral operation was performed on the 13th of October, and five stones were removed. The prismatic shape and uniform size of these were remarkable; but the presence of a foreign body as a nucleus was not suspected until the stones had been dried by evaporation, when a hard substance was heard to rattle loosely within them. On making sections of these calculi, the nuclei were found to be horse beans. The calculous incrustations consisted of the triple phosphates.

The history of this remarkable case is as follows:—About the end of March of the present year, after a carousal with two fellow labourers, with whom he lodged in a barn attached to his master's farm, a quarrel arose, in which he was knocked down and overpowered by his two companions. From the injuries he received, and from his state of intoxication, he was rendered senseless, and whilst in this condition, the following cruel trick was perpetrated on him by his assailants:

He was stripped of his clothes, and a quantity of beans (the common field or horse beans, used for feeding cattle,) were thrust into his mouth and into the rectum; and lastly, several were introduced into his urethra. The manner in which these found their way into the bladder is unknown, but it is probable that several were introduced, one after another, into the orifice of the urethra, and then pushed back along the canal by the pressure of the fingers on the penis and perineum.

On the following morning he was found in a state of insensibility, with his genital organs covered with blood. His companions had made off, and have ever since escaped detection.

A number of beans were vomited, and passed *per anum* on the day following the assault, and during this and the subsequent day he suffered great pain in voiding his urine, which was mixed with blood, and contained several fragments of broken beans.

He was confined to bed for some days, but at the end of a week he had nearly recovered from his injuries, and his urinary symptoms had considerably abated in severity.

From that time forward, however, he continued to suffer more or less severely from the usual symptoms of stone in the bladder, which were well marked at the time of his admission into the hospital.

ART. 66.—*Aneurism of the Femoral Artery; Deligation of the External Iliac; Recovery.* (Under the care of Mr. LLOYD.)

(*Lancet*, March 6.)

With cases like the present, no difference of opinion can exist, as there is but one course of practice; the merits and demerits of deli-

gation or simple compression require no discussion, and the only means of arresting the progress of the disease is to tie the vessel above the tumour. This operation, when performed upon the external iliac artery, appears at first sight rather formidable; but success has now so often attended this measure, that it does not create much apprehension among practical surgeons.

Mr. Lloyd tied the external iliac successfully, some months ago, upon a patient suffering from femoral aneurism. The case presents the following features:

A. B.— is a man about twenty-five years of age, who, four months before the operation, had a bubo in the left groin, which took on a phagedænic action; hæmorrhage occurred several times, and seemed to increase with each attack. The bleeding generally stopped of itself, but was in the last instance so profuse, that he was extremely alarmed. The destructive ulceration began now to diminish, the hæmorrhage did not recur, and the bubo healed perfectly. But it would appear that the plug which had prevented the further bleeding from the ulcerated opening which had probably occurred in the femoral artery, gave way after the cicatrization was completed; or that a sac was slowly and gradually formed during the healing process; for about one month after the cicatrix had been formed, a pulsating tumour, of the size of a walnut, was noticed in the groin.

The patient was admitted, Oct. 20, 1851, the tumour being rapidly increasing, and situated in front of the thigh, and above Poupart's ligament. Mr. Lloyd, with the full concurrence of his colleagues, proceeded, on October 24, to tie the external iliac artery. The operation presented some difficulty, as the tissues were somewhat thickened, and the subject very fat. When the peritoneum had been pushed aside, the incision having run in a straight line from a little above Poupart's ligament to the anterior-superior spinous process of the ilium, the vessel was found so deeply situated, that Mr. Lloyd could not take hold of it with his finger and thumb, but was obliged to press it against the brim of the pelvis.

Mr. Lloyd stated, after the operation, that he anticipated a certain amount of trouble, as the patient had latterly been affected with syphilis and phagedæna; and these fears were not idle, for severe secondary hæmorrhage occurred about five weeks after the tying of the vessel. This was stopped by timely compression; and on Feb. 19, about four months after the deligation of the artery, the wound was quite healed up, and the patient on the point of going into the country. The pulsations had ceased immediately after the securing of the vessel, and the sac had been emptied of its clots a few days afterwards.

PART III.

MIDWIFERY, AND DISEASES OF WOMEN AND CHILDREN.

SECT. I.—MIDWIFERY AND DISEASES OF WOMEN.

Art. 67.—*On Dysmenorrhœa.* By J. Henry Bennet, M.D.

(*Lancet*, Jan. 17, 1852.)

Dr. Bennet considers that dysmenorrhœa may exist—1stly, permanently as a constitutional condition, or accidentally and temporarily in connection with general morbid states. 2dly. It may be the result of the presence of uterine or ovarian disease, or of a contracted state of the cervical canal.

Constitutional Dysmenorrhœa.—This form of dysmenorrhœa is often observed in the females whose uterus appears naturally predisposed to congestion, and with whom menstruation is very abundant, and is preceded and followed by a white leucorrhœal discharge. It is met with also when this is not the case. It may be limited to the first day or two, or extend throughout the entire period. In such women the dysmenorrhœa is evidently functional, the result of the distension produced by over-congestion, or of a peculiar susceptibility of the uterine innervation. The pain is by no means the same in intensity at every period, but varies according to hygienic and moral circumstances. Under the influence of fatigue, excitement, or anxiety, and frequently without any appreciable cause, the dysmenorrhœa will become much more intense than usual, and last a much longer time. This form of dysmenorrhœa may persist with varying intensity throughout the entire duration of the menstrual function, although occasionally it is modified or even removed by marriage, by parturition, or by the mere influence of time. Constitutional dysmenorrhœa can scarcely be considered a morbid condition, although verging on disease. It may be said to be characterised by its commencing with the menstrual function, by the entire and complete absence of all uterine symptoms in the interval of the monthly period, and by the general similarity of the menstrual epochs. Although one period may be, and often is, more painful than another, on comparing menstruation during any two given periods of several months, the amount of pain suffered, and the mode of manifestation of the function, are found to be pretty nearly the same. If a permanent increase of pain occurs, it is a suspicious circumstance, as indicating the possible or even probable existence of some inflammatory condition of the cervix uteri, to which

these females, as we have seen, are peculiarly liable, or of some morbid ovarian condition.

Accidental Dysmenorrhœa.—Dysmenorrhœa may occur *accidentally* in a female who usually menstruates without pain, as the result of over-excitement or fatigue, from exposure to cold, or as the result of some temporary disturbance in the general health. When this is the case, the dysmenorrhœa is probably occasioned by a disturbed or congestive state of uterine circulation, or by an exaggeration of the nervous susceptibility of the uterine organs. It is characterised by its merely temporary existence, and by the fact of its passing away with the cause that has produced it.

Inflammatory Dysmenorrhœa.—Non-constitutional dysmenorrhœa, however, according to my experience, is much more frequently the result of inflammatory disease of the uterine organs, and principally of the cervix, than, as is generally supposed, of functional derangement, or of nervous susceptibility. When menstruation, naturally easy, becomes permanently painful, or when, naturally but slightly painful, it becomes extremely so, we are warranted in looking for local disease. Such a change *does not take place without a cause,* and that cause is, generally speaking, inflammation of the cervix or body of the uterus; dysmenorrhœa being one of the most prominent and most ordinary symptoms of that disease.

This fact applies to the virgin as well as to the married female, and is of extreme importance, as affording a key to those extreme cases of dysmenorrhœa, accompanied sometimes by spinal irritation and hysterical epileptiform convulsions, which appear to resist every form of treatment, and are alike distressing to the patient, her friends, and her medical attendant. Since the author has ascertained that such is the case, nearly all the instances of *extreme* dysmenorrhœa in the unmarried female that have come under his notice have proved to be of this description, and, however intractable before, have yielded as soon as a proper antiphlogistic treatment has been adopted.

In these cases the dysmenorrhœa is a mere symptom of the inflammatory condition of the uterine organs, and is only to be removed by their restoration to a healthier state. Generally speaking, it is the neck of the uterus that is found to be the seat of the disease that occasions the dysmenorrhœa. The latter is nearly always very intense when the body of the uterus is affected. Sub-acute inflammation of the ovaries may also give rise to dysmenorrhœa, but the author cannot agree with Dr. Tilt that it is a frequent cause. This difference of opinion is connected with that which exists between them respecting the frequency of sub-acute inflammation of the ovaries, inasmuch as he considers the symptoms which Dr. Tilt supposes to indicate the existence of such inflammation—pain and tenderness in the ovarian regions—to be merely symptomatic of disease of the uterus or of its neck, in nineteen cases out of twenty in which they are observed.

We may connect with inflammatory dysmenorrhœa that form which has been described under the head of pseudo-membranous, and which is characterised by the expulsion of shreds and casts of plastic lymph from the cavity of the uterus. Dr. Bennet believes that the formation

of these membranes coincides almost invariably with the present or past existence of uterine inflammation. In other words, he has found, in the great majority of cases of this description that have come under his observation, that there has been at first inflammatory disease, although the removal of this disease has not always freed the patient from the liability to the formation of the pseudo-membranous casts. It would appear as if habit alone sufficed in some instances to perpetuate their formation, or at least their occasional formation, even after the removal of inflammation, once they have occurred under its influence. M. Pouchet states, that in all females, even in virgins, a delicate decidual membrane or cast is formed in the cavity of the uterus at every menstruation, and is thrown out about the tenth day. If so, the deciduous pseudo-membranes of dysmenorrhœa may be considered as merely an exaggeration of a natural condition, but occurring, generally speaking, only under the influence of inflammatory disease. The expulsion of these pseudo-membranous shreds is always preceded by an aggravation of the uterine pains, and not unfrequently by tormina similar to labour-pains, which are evidently occasioned by the efforts of the uterus to get rid of the casts formed in its cavity. That the difficulty of expulsion is partly the cause of the uterine tormina, is proved by the fact that he has repeatedly relieved them by dilating the cervical canal in the interval of menstruation, in females who continued to expel pseudo-membranes, and to suffer, after the removal of all uterine disease.

Inflammatory dysmenorrhœa may be said to be characterised by the development of pain as a permanent menstrual condition, in a female previously free from it, or by the increase of pain experienced constitutionally, but in a less marked degree. In other words, as pain during menstruation may exist constitutionally without local lesions, its value as a symptom of disease can only be ascertained by comparing the past state of the patient with the present. Generally speaking, there are other uterine and general symptoms present *during the interval* of menstruation which tend to assist the diagnosis.

Physical dysmenorrhœa.—Dysmenorrhœa may also depend, as demonstrated by Dr. Mackintosh of Edinburgh, on a physical imperfection of the uterine neck; on contraction of the os internum, or of the canal which constitutes the cavity of the cervix. This contraction may be either congenital, or the result of inflammation. The peculiar character of the dysmenorrhœa, when caused by congenital contraction, is the absence of *any* uterine symptom during the interval of menstruation, and intense agonising pain for a few hours before the flow of blood appears, either then disappearing, or lasting throughout the period; these pains commencing with menstruation in early youth. If they are occasioned by inflammation, there are the same symptoms at the time of menstruation, but there is not the same immunity from uterine symptoms in the interval of the catamenia.

The cause of the pain experienced under these circumstances is evident. The cavity of the non-pregnant healthy uterus not containing more than about ten or eleven drops of fluid, as soon as the catamenial secretion commences from the lining membrane of the uterine cavity, unless the blood find a free exit through the os internum and the cavity

of the cervix, it distends the uterus, and gives rise to great pain. The obstruction may merely be at the os internum, spasmodically contracted; in which case, as soon as it has been overcome, the blood escapes freely, and pain disappears. But if the os internum is permanently contracted, or the contraction exists in the cervical canal, the pain may continue throughout the catamenial period.

A contracted state of the upper part of the cervical canal, or of the os internum, is not, the author believes, an unfrequent complication of inflammation of the cervix, from the swelling and hypertrophy of the substance of the organ which it occasions. This remark, however, does not apply to the *inflamed region* of the cervical canal, which is uniformly dilated by the existence of inflammation.

The author does not, however, think that Dr. Simpson's criterion of the existence of contraction of the os internum is entirely to be depended upon. Dr. Simpson believes, if the interpretation of his views be correct, that unless the uterine sound pass without effort into the uterine cavity, there is contraction of the os internum. Now the careful examination with the sound, of many hundred females has led the author to a different conclusion. There evidently exists, he says, at the os internum a kind of muscular sphincter formed by a strong band of the circular muscular fibres of the cervix, and destined to close the uterus during the latter stages of pregnancy. Generally speaking, this sphincter, in the natural state, is sufficiently closed to prevent the uterine sound passing into the cavity of the uterus, unless a considerable amount of pressure be exercised. In nearly all the females examined, in the interval of menstruation, the sound passes easily along the cervical cavity, but stops at the os internum; and that when there is no reason whatever to suppose the existence of a morbid coarctation.

The author believes, on the contrary, that a free communication between the cervical and uterine cavities, allowing the *easy* introduction of the uterine sound, is generally an anomalous condition, indicating the existence of disease, unless observed soon after menstruation, when the os internum relaxes, or soon after parturition, when it has not yet had time to recover its normally contracted state. The principal morbid conditions in which a free communication has been observed between the two cavities, are inflammation and uterine tumours. If the inflammation which exists at the os uteri, and in the lower part of the cervical cavity, ascends as far as the os internum, it appears to relax the muscular contractility of that region. The os internum is always open when the inflammation passes into the uterine cavity, and implicates its lining membrane. The same effect is also produced by the development of the uterine cavity, through the formation of tumours in the substance of the uterus, or from any other cause; the os internum gradually opening as the uterus enlarges, probably by the same mechanism as in pregnancy. This is so generally the case, that the fact of the uterine sound penetrating easily through the os internum into an enlarged uterine cavity, may be considered a valuable symptom of the existence of such tumours, to add to those with which we are already acquainted.

Extreme dysmenorrhœa from congenital contraction of the cervical canal and os internum, independent of inflammation, is, the author

believes, of *rare occurrence*. This he thinks a fortunate circumstance, as it is most embarrassing to treat, requiring an amount of interference with the uterine organs which it is very painful to have to propose to an unmarried female. Dilatation of the contracted cervical canal is, however, sometimes the only means we have of remedying an amount of suffering at the catamenial period, so extreme as to render life nearly a burden, and as to re-act deeply on the general health.

Whatever may be the cause of dysmenorrhœa, the mode in which the menstrual secretion takes place is modified by its existence: instead of a flow of bright blood, regular and continuous, although generally increasing by exercise and diminishing by rest, we have a dark, interrupted, clotted discharge. After severe uterine pains which may last many hours, and are often accompanied by tenderness, and swelling in the ovarian regions, and pain in the back and down the thighs, more or less dark, clotted blood is thrown out. Its expulsion is generally followed by relief, and by a freer flow for a while, when it again diminishes, and the same ordeal again takes place. Sometimes the interruption will be complete for one, two, or three days, the pains subsiding with the menstrual flux, and returning when it again makes its appearance. The venous condition of the menstrual secretion shows plainly that, either from inflammation, congestion, or some other cause, the uterine circulation is defective, the blood stagnating in the vessels of the uterus, remaining in its cavity, and distending it after it has been secreted.

Treatment.—Constitutional dysmenorrhœa may be palliated in its attacks, but can seldom be removed by medical treatment. A great deal of subsequent uterine disease would, however, be spared to those young females who unfortunately present it, were mothers more generally aware that its existence constitutes throughout life a strong predisposition to uterine inflammation, and that they cannot take too great care of such of their daughters as suffer from it. For such young females the discipline of public schools may be said to be nearly always too severe, and often to lay the foundation for much future physical and mental misery. That this must be the case, will be easily understood when we reflect that the domestic treatment of this form of dysmenorrhœa consists principally in *rest* and *warmth*. Females who suffer habitually from dysmenorrhœa, whatever their age, should remain quietly at home, taking care to preserve themselves from atmospheric vicissitudes during the first day or two of menstruation, which is the period during which the pain is mostly felt. A warm hip-bath will often be found useful. If the pains are very decided, it is even best to confine the sufferer to bed, and to apply warm linseed poultices to the lower abdominal region—a valuable and simple mode of soothing pain.

In mere constitutional dysmenorrhœa, these simple means nearly always suffice to render the pain very bearable. If they do not produce relief, that fact alone constitutes a suspicious circumstance, and should induce the medical attendant to scrutinize narrowly the state of his patient, lest there should be some morbid or physical cause.

In severe dysmenorrhœa, connected with uterine disease, the only *efficacious* treatment is that of the cause of the disease which occasions

the dysmenorrhœa. As time is required, however, we are often called upon, even in these cases, to treat the dysmenorrhœa as a symptom; and, warmth and rest failing, recourse must be had to medicinal agents. By far the most efficacious remedy with which the author is acquainted, is the injection of laudanum, or any other preparation of opium, into the bowel. From fifteen to thirty minims of laudanum, mixed with a little warm water, should be injected into the rectum, and will generally exercise, if retained, as much influence in soothing the uterine pain as would double the quantity taken by the mouth. Moreover, the nausea and headache which opiates occasion are much less likely to be produced when they are thus administered. If the first opiate injection is not retained, a second, half an hour later, will generally be more successful. He has also found chloroform of great value in these cases. It may be inhaled or administered by the mouth, in doses of from twenty to forty minims, mixed with mucilage, the yoke of an egg, or with camphor, which favours its suspension in water. He has given it by injection, but with less success, as it appears, generally speaking, to irritate the rectal mucous membrane, and is consequently not retained. When it is retained, the sedative effect is nearly always effectually produced. Although chloroform may thus often be resorted to with great benefit in dysmenorrhœa, I do not find that as much reliance can be placed in it as in opiates.

There are various other medicinal agents, principally antispasmodics and narcotics, which may be administered with benefit in dysmenorrhœa. We may mention more particularly the various ethers, and especially sulphuric ether, hyoscyamus, belladonna, musk, valerian, and camphor. It must not, however, be forgotten that these remedies are mere temporary palliatives; that dysmenorrhœa, when constant and not constitutional, nearly invariably recognises some physical cause—generally speaking, uterine or ovarian inflammation, and that it is this cause which we must find out, and remove, during the interval of menstruation.

It is the fact of dysmenorrhœa being so frequently caused by inflammatory disease, that explains the success which often attends bloodletting, both general and local, and which has induced so many authors to recommend it, although unaware of the pathological state which it relieves. General bloodletting acts by revulsion; whilst local bloodletting directly relieves the congested and embarrassed abdominal circulation. The author seldom, if ever, resorts to general bleeding in dysmenorrhœa, because the relief which it gives is obtained at too great a sacrifice of the strength of the patient, and cannot, moreover, be depended upon. A few leeches applied to the groin, or, better still, to the neck of the uterus, when possible, if the discharge is scanty or temporarily arrested, is much more likely to mitigate the pain, and with less loss to the economy. Purgatives, which are frequently useful, act in the same way as leeches, by depleting the abdominal circulation. Some authors, amongst others, Dr. Gooch, have considered dysmenorrhœa to be frequently akin to rheumatism, and have recommended colchicum, guaiacum, and other medicines usually given in rheumatic affections. That the uterus may be the seat of such an affection, is undeniable; but the author is persuaded that its frequency

has been greatly exaggerated, as likewise that of irritable uterus. Indeed these two conditions may be said to have been, to a great extent, mere theoretical creations, destined to account for pathological conditions, the real nature and meaning of which has, until recently, been a mystery to the profession.

It will be seen, by what precedes, that dysmenorrhœa is by no means so simple a disease, or so easy to treat, as has been generally supposed, involving, as it often does, the question, whether or not local disease requiring local treatment may not exist as the real cause of the morbid state. If it resists all general treatment, it is probably the result of such disease, and the health and happiness of a young female are seriously endangered. Of course the medical practitioner has a duty to perform to his patient, before which all scruples must be made to succumb. The author, however, here repeats, what he has so often said elsewhere, especially with reference to unmarried females, that nothing can warrant manual or surgical investigation and treatment, but months, or even years, of unsuccessful treatment, and the conviction, with the latter, that unless they be resorted to, the case must be abandoned as hopeless. He would also repeat the advice given in his work on 'Uterine Inflammation,' that a consultation should always be held first when the patient is unmarried, to decide the point, whether the examination of the uterine organs be warranted and necessary.

ART. 68.—*On Dysmenorrhœa.* By EDWARD RIGBY, M.D., &c.

(*Medical Times*, Oct. 25, 1851.)

Dr. Rigby divides dysmenorrhœa into mechanical and functional.

Under the head of mechanical dysmenorrhœa come those numerous cases where the catamenial secretion takes place naturally, but where, from the contracted or closed state of the os uteri or canal of the cervix, the fluid is discharged from the uterine cavity with much difficulty and suffering, or is altogether obstructed. The chief feature, therefore, of this species of dysmenorrhœa is, that pain precedes the discharge. It varies in different individuals, sometimes coming on but a few hours before it; in others the patient may begin to suffer for days, or even a week, before the appearance of the catamenia. This will probably depend on the slowness or rapidity with which the secretion comes on, and on the amount of irritability which the uterus manifests on becoming distended with the menstrual fluid. Hence, when the secretion flows fast, and the uterus resents the accumulation within its cavity, we shall probably have a sharp but short attack of pain; the distension of the uterus, and its own contractions, which are generally quickly excited, producing the requisite degree of dilatation for the discharge of the fluid. Where the pain commences some days before the appearance of the discharge, the patient is warned of its approach by a sense of weight and distension in the pelvis, with feeling of discomfort. This soon increases into catamenial pain, occasionally producing, from the increasing size of the uterus, frequent desire to relieve the bladder, and pain on evacuating the rectum.

In mild cases a moderate amount of distension is sufficient to effect the necessary degree of dilatation of the os uteri, and the accumulated fluid is discharged with complete relief to the patient; but where the obstruction is greater, and produces greater resistance, the accumulation goes on, the pain becomes more severe, and now, as the uterus is roused to contract upon the retained fluid, she experiences exacerbations of intense suffering, similar to the severe pain we sometimes see in bad cases of abortion or early miscarriage, until, after a long and agonising struggle, the obstruction is surmounted and the discharge takes place.

In cases of obstructive dysmenorrhœa of this severe character, the uterine system, as well as the general health, suffer considerably. She has scarcely recovered from the effects of one period, before the next is warning her of its approach. The uterus becomes enlarged by this periodical distension, so that the ordinary internal measurement of two inches and a half from the os to the fundus, will become three inches, or even more. The uterus, from the increased size of the cavity, never clears itself entirely of the secreted fluid, but more or less continues to be retained. After a time, the watery portion becomes absorbed, leaving what remains of a dark, thick, treacle consistence, to be evacuated at the next time. Hence it is that, in passing the sound or dilating the os uteri, in these cases, a quantity of dark brown, slimy fluid frequently besmears the instrument, and the patient has a discharge of a similar character for a day or two afterwards, with much relief.

The immediate effect of such severe uterine irritation and suffering is to derange the chylopoietic functions considerably; the tongue soon displays that dry, rough, short-napped fur which is so invariably seen under circumstances of uterine irritation. The stomach, liver, and bowels become deranged, with more or less hæmorrhoidal congestion and loaded urine; and this condition reacts on the uterine system, and increases the irritability and suffering at the next period.

Obstructive dysmenorrhœa seldom continues for any period of time without producing more or less ovarian irritation. The ovaries are well known to present a considerable degree of congestion at these times, even in a state of health; but, under such circumstances, the congestion assumes more the character of inflammation, to the great aggravation of the patient's sufferings. There is severe pain in the grain above Poupart's ligament, darting down the thigh; the part is very tender upon pressure, and frequently feels to the patient as if swelled; the discharge is attended with exudations of fibrinous matter, and is mixed with small clots, which are more or less broken up as they are forced through the contracted os uteri; chronic inflammation of the ovary is gradually set up, and is not unfrequently attended with severe menorrhagia.

There is no doubt, that a large number of cases of obstructive dysmenorrhœa are due to a congenitally contracted state of the os uteri or canal of the cervix; and, accordingly, we find that, in many or most of these cases, the patient has suffered at her catamenial periods from their first appearance; in others, it has come on some years later; in others, not until marriage. The catamenia may be

obstructed in cases of retroversion and anteversion of the uterus, where the os uteri internum or the canal of the cervix become more or less closed, owing to the bent state of the part in this displacement. In those cases which are occasionally seen to occur for the first time after marriage, the author presumes it is owing to the congested, swollen state of the lining membrane obstructing still further a canal or orifice, which, though contracted, had nevertheless till then allowed the discharge of the catamenia without any peculiar difficulty. There can be little doubt, but that the obstructive dysmenorrhœa which is sometimes seen in connection with rheumatic-gouty habits, arises from a similar condition of the mucous membrane lining the os and canal of the cervix uteri.

The treatment of obstructive dysmenorrhœa consists in first attending to the general health, and rectifying any functional derangement which may have occurred, and in effecting the necessary degree of dilatation of the os and cervix uteri as shall remove the obstruction which has hitherto existed to the discharge of the catamenia. The dilator which the author has been in the habit of using for many years is well known in the shops of our principal instrument-makers, especially Ferguson and Weiss; and is, he thinks, the safest and best adapted for the purpose. The blades, being made of well-tempered steel, readily yield to any resistance which they may meet with, and thus modify greatly the force which is applied to the part; while the steady pressure which they exert, when opened in the canal of the cervix and allowed to remain so for about a minute, rapidly effects a considerable degree of dilatation. When this is done but a short time before a period, the relief is frequently very striking; the discharge appears freely, with little or no precursory pain; and the patient declares that she has never known a period to pass so easily. If the dysmenorrhœa has been habitual, the dilatation is usually accompanied with a discharge of that dark slimy matter which has been before described, and which had evidently been retained in the uterus since the last period.

How far the effects of this mode of dilating the os uteri will be permanent must always be uncertain; they vary greatly in different individuals. In some, the os uteri has returned to its former condition in 24 hours; in others, the dilatation seems to be nearly or quite permanent.

A still further and more permanent degree of dilatation may be effected by the introduction of a sponge-tent, which, when well made and skilfully introduced, completely dilates the whole canal of the cervix during the night, with but little pain, so that the finger may even pass into the uterine cavity when the sponge is removed the next morning. Generally speaking, it is necessary to use the dilator first, to open the passage sufficiently to admit the tent. Professor Simpson, was the first to point out the use of metallic tents of different size, which are worn for some weeks, and there is no doubt, that the dilatation which they produce is more permanent than either of the above-mentioned methods. In some patients, however, they produce severe irritation, whereas, in others, they are not only borne easily, but with great relief.

Where these various means of dilating the os and cervix by stretching

have failed, we have no choice but of dividing the contracted portion by means of the *bistoire cachée* which Professor Simpson first used for the purpose. The operation is neither difficult nor peculiarly painful; the incision commences at the os uteri internum, gradually increasing in depth as it descends towards the os uteri externum or os tincæ, just above which it should have completely divided the wall of the cervix. I make but one incision, viz., in front; the amount of discharge is usually as much as at an ordinary catamenial period, and it is desirable that the operation should be performed as near to the halfway time as possible, since the chance of any profuse degree of discharge is less than at any other period. In one or two days afterwards a metallic tent must be introduced, so as to prevent the part from closing by cicatrisation, and to insure a canal of the requisite size; this should be retained for fourteen days, and may then be safely removed.

Lastly, there is no doubt that much of our success in these cases will depend on the attention which we pay to the state of the general health, and the care with which we rectify any derangements of the primæ viæ, &c. Mild alteratives and laxatives, followed by such combinations of tonics as are considered to exert an alternative effect, as of the nitro-muriatic acid with bitter infusions; and tonics of a stronger character combined with saline laxatives, seem to be the medicines best adapted for the general treatment in these cases.

The local use of opiates to allay pain can scarcely be said to be indicated in obstructive dysmenorrhœa, although, in the other forms of painful menstruation, they are a very valuable class of remedies.

Art. 69.—*On Menorrhagia.* By J. Henry Bennet, M.D.

(*Lancet*, Feb. 18, 1852.)

[Menorrhagia, observes Dr. Bennet, is generally considered to denote congestion of the uterus, independent of local disease, and connected with some general disturbance of the system. This he believes to be an erroneous view; he maintains, that the quantity of blood lost is seldom so great as to constitute hæmorrhage, and the periods are seldom morbidly approximated for a *continuance* (apart from tumours, polypus, and cancer,) unless some chronic inflammation of the cervix or body of the uterus exists, or the change of life be approaching. The varieties of menorrhagia alluded to by him are, accidental and inflammatory menorrhagia; menorrhagia from ovaritis; at the dawn and close of menstruation, and during and after pregnancy. Of the first he says:]

Accidental Menorrhagia.—The above remarks, however, apply only to *confirmed* menorrhagia, and not to those cases in which menorrhagia appears in a casual and evanescent form, under the influence of some accidental and temporary cause, such as mental emotions or violent exertion. Under such influences the menstrual flux is not unfrequently increased in quantity, prolonged in duration, or morbidly approximated, in the absence of local disease. This is more especially observed in those females who are habitually menstruated profusely, and with

whom menstruation presents the extreme physiological duration. These casual hæmorrhagic manifestations, however, very rarely become permanent, ceasing without treatment; the function, as it were, soon righting itself.

Inflammatory Menorrhagia.—Menorrhagia originating in chronic inflammation of the cervix or body of the uterus, occasionally persists after the removal of the morbid condition which at first occasioned it. When this is the case, its persistence is generally the result of a torpid, languid state of uterine circulation, giving rise to obstinate congestion; a not unfrequent sequela, as I have elsewhere stated, of long-neglected uterine disease. This congested condition of the uterine circulation may or may not be connected with chronic enlargement or hypertrophy of the body of the uterus. I have, however, met with such enlargement in most of the cases of menorrhagia which have obstinately persisted after the subdual of local inflammatory disease. In these cases, the uterine hypertrophy did not appear to be connected with actually existing inflammation of the body of the uterus, but to be traceable to a previously diseased state of the cervix uteri, which had prevented the latter organ returning to its normal size after parturition. Indeed, I think I may state, as the result of observation, that the *actual existence* of chronic inflammation in the tissue of the body of the uterus, generally diminishes the menstrual flux, and retards its appearance, whilst inflammation of the cervix renders it more profuse and more frequent than usual. Inflammation of the mucous membrane lining the uterine cavity, on the contrary, is often a cause of hæmorrhage.

A congested state of the portal circulation, connected with hypertrophy and passive congestion of the liver, or with other abdominal lesions, has occasionally, in my experience, given rise to obstinate uterine hæmorrhage, especially in cases in which the tone and contractile powers of that organ had been simultaneously weakened by chronic inflammation.

Menorrhagia from Ovaritis.—Sub-acute inflammation of the ovaries may no doubt sympathetically re-act on the uterus, and produce menorrhagia. Notwithstanding, however, the intimate physiological connection between the ovaries and the function of menstruation, I have not often been able to trace, clinically speaking, menorrhagia to such disease, unaccompanied by uterine lesions. At the same time, it is quite possible that the irritable state of the ovaries, which inflammatory disease of the uterus so very frequently induces, may re-act on the menstrual function, and contribute to exaggerate and pervert it. In these cases, however, the uterine lesion is generally, according to my experience, the primary and principal cause of the menorrhagia; on its removal the ovarian irritation disappearing along with the menorrhagia.

Menorrhagia at the Dawn and Close of Menstruation.—Menorrhagia is occasionally met with at the dawn and close of menstruation, from mere uterine congestion, apart from any local inflammatory disease.

Thus, the first manifestation of the menses may be characterised by a severe attack of hæmorrhage, the subsequent periods being physiological; or the menses may continue to appear hæmorrhagically at

irregular intervals for several months. This latter type of menorrhagia, however, is much less frequently met with than the first. When, also, the menses are about to cease definitively, and become physiogically irregular, profuse menstruation, amounting to flooding, is not unusual, as a result of mere congestion. Thus the menses will disappear for two or three months, and then return with excessive abundance. It is very seldom, however, even at this period of life, that hæmorrhagic menstrual fluxes occur frequently, and assume a continued character, in the absence of tumours or malignant disease, unless there be inflammatory ulceration of the cervix. In nearly all the instances of very obstinate hæmorrhage at the change of life which I meet with, I find, on examination, that the congestion and hæmorrhage, are kept up by inflammatory and ulcerative disease. Indeed some of the very worst instances of protracted and severe hæmorrhage that I have ever seen, have been cases of this description; and what satisfactorily proves that the inflammatory affection is the cause of the continued hæmorrhage is, that when it is cured the hæmorrhage generally ceases. This is not, however, invariably the case. I have occasionally met with females at the critical period of life, in whom hæmorrhage obstinately persisted after the removal of the inflammatory and ulcerative disease of the cervix, which had probably in the first instance given rise to it. In several of these cases, however, time or dilatation of the cervix has subsequently proved that the hæmorrhage did not proceed from a sound uterus, but was connected with the presence of a polypus, or of a fibrous tumour, so small and obscurely situated as not to have been recognised at first.

Menorrhagia during Pregnancy.—The periodical hæmorrhages which occasionally occur during pregnancy, are considered by some writers to be of a menstrual character. Without denying the possibility of a true menstrual flux taking place from the cervical canal during pregnancy, I would mention, that in nearly all the cases of this form of hæmorrhage—not merely temporary, and not proceeding from separation of the ovum—that have come under my observation, I have discovered inflammatory ulceration of the cervix. This fact certainly offers the most natural explanation of the presumed menstruation of pregnant women, at least in the majority of instances. On examining these patients, I have generally found blood escaping from the ulcerated uterine neck, the ulcerations presenting the peculiarly turgid and luxuriant appearance, which I have generally described as characteristic of such lesions during pregnancy. When a pregnant female suffering from ulceration of the cervix is instrumentally examined, the ulcerated surface bleeds freely on the slightest touch, and women in whom abortion or premature confinement is brought on by such disease are very frequently found, on inquiry, to have experienced repeated hæmorrhagic fluxes during the pregnancy, which are often mistaken for menstrual periods.

Menorrhagia after Parturition.—The continued and obstinate hæmorrhage which is often observed after parturition, both before and after the return of menstruation, is nearly always complicated with and occasioned by inflammatory ulceration of the neck of the uterus, with or without disease of the body of the uterus. This form of

menorrhagia may be protracted for months after the labour, until the patient be reduced to the last stage of anæmia, if the real cause is not discovered and efficiently treated.

In the various forms of menorrhagia occurring in the non-pregnant female, and accompanied by ulcerative lesions, does the blood escape from the lining membrane of the uterine cavity, as in ordinary menstruation, or from the ulcerated surface? I believe that both these surfaces are often simultaneously the sources of the hæmorrhage, although sometimes it may proceed from one only. I have frequently seen the blood oozing from the diseased surface under all the circumstances mentioned, and have often checked it instantaneously by freely cauterizing with the solid nitrate of silver the *entire* ulcerated surface, both internally and externally to the os uteri.

Treatment.—The views and facts which I have above developed are of extreme practical importance. Not only do they render unnecessary, in the immense majority of cases, the hair-drawn distinctions of pathologists with reference to the constitutional state of the patients suffering from menorrhagia, but they also greatly simplify treatment. The hæmorrhage being in reality nearly always the result of local disease, the latter is, in most cases, the real element to be attacked and subdued. Instead, therefore, of an intricate and complex system of therapeutics, founded on a host of indications, the practitioner has, generally speaking, merely to *bring to light and treat* the disease which causes the mischief. By so doing, he removes the morbid condition which keeps up the hæmorrhagic state, and menstruation spontaneously returns to a natural state.

In those forms of menorrhagia in which the absence of any local disease is evident, or at least to be presumed,—at the beginning and termination of the menstrual function, for instance, or when the hæmorrhage occurs in an accidental manner from some easily-assignable cause, mental or bodily,—very little medicinal treatment is, generally speaking, required. If the patient be kept at rest in a horizontal posture, and the cause be removed, the hæmorrhage will generally subside of itself, without leaving any trace in the general health beyond temporary debility, which quiet and a moderately nourishing dietary soon remove.

This is not, however, always the case; the hæmorrhage may, even under these circumstances, be so severe and so prolonged, that it would be imprudent to trust to the unassisted efforts of nature. When such is the case, the indications are, to moderate the activity of the circulation by the means of sedatives, such as opium, hyoscyamus, digitalis, hydrocyanic acid, Indian hemp, and other medicinal agents similar in their action; to modify the plasticity of the blood by the administration of vegetable and mineral acids; and to exercise a revulsive action on the intestinal canal by the means of saline purgatives. The application of cold to the lower abdominal region, and the injection of cold astringent injections into the vagina, may also be resorted to should these means fail. It is as well, however, to wait, unless the hæmorrhage be excessive, until the normal duration of the menstrual flux in the patient has passed, lest the impression of cold should suddenly arrest the excretion of blood, whilst the physiological flux

towards the uterus is still in force, as extreme congestion, and even inflammation, might ensue. This appears to me a desirable precaution, and one which I usually adopt, although the direct impression of cold to the uterine organs during menstruation does not appear to be in reality as dangerous as it is usually considered.

In this, the most simple form of menorrhagia, it is seldom necessary to resort to those medicinal agents which have a direct influence upon the uterus, such as ergot of rye and savine. It must not, however, be forgotten that they are very valuable anti-menorrhagic remedies, and often succeed when all other medicinal means fail to arrest the hæmorrhage. As a last resource, we can resort to plugging the vagina; but this is a means of treatment which may be said to be scarcely ever necessary in mere accidental menorrhagia, and which may be kept in reserve for the more formidable forms of hæmorrhage, of the treatment of which we have yet to speak.

Should the antecedents of the patient, carefully scrutinized, reveal the existence of any decided uterine symptoms, or lead to the impression that uterine disease may exist, as soon as the hæmorrhage has stopped, or has been temporarily arrested by the means above-mentioned, the state of the uterus and of its cervix ought to be investigated—firstly, by the touch, and secondly, by the speculum, should the finger detect disease, or a suspicious condition of the uterine neck and of its cavity. In those cases in which the hæmorrhage is continuous, or all but continuous, it is not necessary to wait for its entire subsidence to examine the patient. When the exacerbation which corresponds to the menstrual epoch in the patient has passed, and the hæmorrhage has abated, the state of the uterine organs should be ascertained without delay.

When inflammation, and more especially inflammatory ulceration of the neck of the uterus is discovered, and the absence of cancerous lesions or of fibrous growths has been ascertained, the practitioner may consider that, in nineteen cases out of twenty, he has found the key to the menorrhagic state, and that the most efficacious and prompt means of treating it is to treat the disease he has discovered. From that moment he may look upon all medicinal anti-hæmorrhagic agents as mere adjuvants—useful no doubt, but of very secondary importance compared with the treatment of the local disease. Very often the hæmorrhage stops as soon as the irritability of the inflamed surface is modified and long before the disease is cured.

The menorrhagia, however, may persist with more or less intensity, notwithstanding the gradual improvement of the local disease. It is with such patients, more especially that great advantage may be derived from the administration of ergot of rye in substance or infusion, of savine in powder, of gallic acid, and of the other medicinal agents mentioned. I generally begin with scruple doses of the ergot or savine two or three times a day, gradually increasing the dose if required.

In those cases in which, as we have seen, the hæmorrhage persists after the entire removal of local disease, owing to enlargement of the uterus to the presence of a small unrecognised polypus or uterine tumour in the cavity of the uterus and its neck, or from the mere

hæmorrhagic habit, I have of late resorted, with encouraging success, to plugging *the os uteri itself*, instead of the vagina. It occurred to me that the usual plan of filling up and distending the vagina by pieces of sponge or a handkerchief, was a very clumsy, painful, and inefficient mode of opposing mechanical resistance to the exit of blood from the undeveloped uterus, when its orifice could be so easily brought into sight. Acting on this idea, I have, in several instances, brought the cervix uteri into view, and passed inside the os two or three small pieces of cotton, tied to a piece of thread, which I wedged in firmly, covering the whole cervix with two or three larger pieces left in close contact with it on the withdrawal of the instrument. In most of the cases in which I have resorted to this plan, I have easily arrested the hæmorrhage. Indeed, this modification of the ordinary practice appears to me so simple and so consonant with common sense, that I cannot but think it will be adopted in severe cases. In the ordinary operation of plugging the vagina, that canal has to be distended by a large mass of sponge or linen, soaked with clotted blood, which often interferes with the functions of the bladder and rectum, is always a source of great discomfort to the patient, and is not always efficient; whereas, by the plan I describe, the end proposed is much more effectually encompassed with scarcely any annoyances to the patient beyond that which the use of the speculum occasions.

Owing to the natural contractility of the cervical canal, and the pressure of fluids from behind, if the cotton is not well pushed in, it is soon forced out. The plug may be left without renewal twenty-four or even thirty-six hours; but in the latter case it is generally expelled spontaneously. A small piece of sponge may be used, and is more likely to remain *in situ*, owing to its expansion; but as it must necessarily be very small, it is more likely to be permeated by the blood. If sponge is used, great care should be taken to extract the piece passed into the os, to which a small piece of thread should always be tied, as the os uteri might not be able to expel it alone, owing to its great expansion.

In the class of cases of which we are now treating, I have occasionally found that a few leeches applied after menstruation to the cervix uteri, have arrested the hæmorrhage.

I need scarcely add, that any disease of the abdominal viscera that appears to favour the hæmorrhage should be treated, and that the debility occasioned by menorrhagia must be met, during the intervals of the attacks, by as nourishing a diet as the patient will bear, and by those tonics which are suited to her state. It must, however, be borne in mind that when the hæmorrhage is accompanied or occasioned by inflammatory uterine lesions, the stomach is generally sympathetically affected, and unable to digest much food, so that a free dietary may be postively injurious and increase the mischief.

Art. 70.—*On the Treatment of Amenorrhœa.*

By J. Henry Bennet, M.D.

(*Lancet*, 1852, p. 353.)

The rules which should guide the practitioner in the treatment of amenorrhœa must be drawn from an attentive consideration of the causes by which it is occasioned, and must vary as they vary. In a general point of view, however, the indications are, 1st, to give tone to the economy if tone be deficient, and to remove general or local disease if such disease be present; 2dly, to favour and promote, within reasonable and judicious limits, the menstrual function. We will now briefly see how these indications are best carried out in the various forms of amenorrhœa above described.

When the advent of the menstrual flux is retarded in well-developed young females, who evidently suffer, both generally and locally, from the delay, a little judicious management will often determine its appearance. The state of the health should first be carefully scrutinised, and any general or functional derangement remedied by proper treatment. If the patient is weak and delicate, the various preparations of iron, with a generous dietary, are often of great use. If, on the contrary, she is plethoric, and subject to headache and flushing of the face, a light diet, gentle exercise, and alterative or saline medicines are indicated. A young female suffering in this way is better at home, under the eye of a devoted and attentive mother, should she be fortunate enough to possess such a parent, than in a public school, where the rigid discipline usually enforced renders it difficult to pay that attention to her state which it requires. Under the influence of these general means, the menstrual function usually manifests itself, and becomes regularised in the course of a few months. Should they prove inefficient, slight periodical stimulation of the uterine system should be resorted to. The plan the author most frequently adopts is, the application of large mustard poultices to the breasts and inner and upper parts of the thighs, alternately, night and morning, during five or six days, every four weeks. The mustard poultices should be allowed to remain on until the skin reddens and begins to feel painful, but not long enough to blister it, as that would prevent their being replaced the following day. The feet may also be put in hot water night and morning, for a few minutes, and if there is any pain in the hypogastric or ovarian regions, large warm linseed poultices, sprinkled over with laudanum, may not only afford relief, but also promote the menstrual excretion. When the symptoms of local congestion are very marked, the application to the vulva of a few leeches every month, or about the fifth day of the local treatment, may be of great assistance. The commencement of this local treatment should be made to coincide with the menstrual nisus, when it manifests itself periodically. When it does not, a certain date should be taken, and adhered to at the interval stated—that is, every twenty-eight days. In such cases the medicines known as emmenagogues, which exercise a special influence over the uterus, are scarcely, in the author's opinion, admissible, the object being to *gently* promote the natural function, and not to violently stimulate, and probably irritate, the uterine organs.

In amenorrhœa connected with deficient uterine and bodily development, the local treatment should be conducted on the same principles, only it generally requires to be carried out more perseveringly and for a greater length of time. In addition to the means mentioned, the author has derived great benefit from electricity, the electric current being carried through the pelvis from the hypogastric to the sacro-lumbar region, for an hour night and morning, during the week that local means are resorted to. In these cases it is evident that the non-development of the body is often in a great measure the *result* of the dormant condition of the uterine organs, inasmuch as he has repeatedly succeeded in rousing them to action by the local treatment above detailed, when the most judicious and persevering general treatment had failed. In these cases he has invariably seen the bodily structures subsequently develope themselves with great rapidity. At the same time, the knowledge of this fact must not for a moment prevent our employing every possible means of invigorating the general health, of vitalising the economy, and of promoting the regular play of the various functions. After removing any morbid functional condition which a careful scrutiny may detect, recourse should be had to the mineral and vegetable tonics, and especially to ferruginous preparations, to which should be added a generous diet, moderate food or horseback exercise, cold bathing or sponging, early hours for retiring and rising, and residence in the country, if possible.

When amenorrhœa can be traced to a debilitating disease, such as chlorosis, phthisis, scrofula, &c., the best treatment is the treatment of the disease to which it is referable. Thus, in chlorosis, the menstrual flux gradually diminishes, and may finally cease altogether under the influence of the progressive deterioration of the blood, without there being any uterine disease or any other uterine symptom than the scantiness and final disappearance of the secretion. As under appropriate general treatment the blood becomes healthy, menstruation returns or again becomes gradually more and more normal, without any local treatment being necessary in the immense majority of cases. The same may be said of scrofulous and other forms of constitutional debility. In pulmonary phthisis, the falling off and final disappearance of menstruation is a symptom of much more serious import, as it is generally connected with the more advanced stages of the disease, and with an amount of tubercular deposit, and of consequent marasmus, through defective nutrition, which renders the chance of a recovery very problematical.

Amenorrhœa from physical obstacles can only be remedied by surgical means. If the hymen is imperforate, or the lips of the vulva are adherent, and the menses have collected behind, a crucial incision in the centre of the bulging hymen, or vulvar protuberance, is all that is required. Care, however, should be taken, once the menstrual fluid has been evacuated, that the divided surfaces do not unite and cicatrise. This is to be prevented by the use of small sponge or cotton tents for a few days, or by the application of the nitrate of silver to the edges of the incisions—a more painful but equally efficacious process. When the vagina is partially or wholly absent or closed, either congenitally or by adhesion from accidental causes, the case is a much

more serious one, and more difficult to remedy. If there is merely adhesion of the walls of the vagina, this adhesion can generally be removed by the dilatation of the vagina, coupled with the gradual and careful division of the adherent surfaces. When the vagina is partially or entirely absent, the symptoms produced by the retention and accumulation of the menses in the uterus may be sufficiently serious to render it imperative to attempt to form an artificial passage, by surgical means, to the distended uterus. In such cases the difficulty and risk of the operation depends on the distance that separates the vaginal cul-de-sac or the imperforate vulva from the uterus, the operator having to make his way between the rectum and the bladder. Considerable assistance in diagnosis is derived from a careful rectal examination. It is of great importance to find a vent for these uterine accumulations of menstrual fluid, as, in addition to the suffering endured, there is positive danger to life. Cases are on record in which the distention of the uterus extended to the Fallopian tubes, and in which death occurred from the peritonitis occasioned by their rupture.

Occlusion of the os uteri, as a congenital occurrence, is rare; but since the author first recommended the use of potassa cum calce as a last resource in obstinate inflammatory disease of the cervical canal, he has seen several cases in which its use has been followed by all but complete occlusion, and by partial retention of the menses, or at least their difficult excretion. This was evidently owing to the want of due caution at the time of application and during the period of healing afterwards. The tendency of the tissues thus treated to contract being very great, it should be counteracted, if necessary, by the occasional use of wax bougies, until the process of repair has been fully accomplished. The possibility of this accident occurring through the want of caution of the operator, does not in the least invalidate the utility of the remedy as an exceptional and ultimate one. The author has generally, but not always, found this form of occlusion easy to remove by progressive dilatation. Should occlusion of the os uteri exist congenitally, once recognised it is easily remedied by a slight incision in the region of the os, and by subsequent dilatation.

When menstruation is accidently arrested or prevented, by exposure to cold and wet, by illness, or by any other of the causes enumerated, the amenorrhœa is seldom of long duration. The condition in which it originated having ceased to obtain, the function generally rights itself; the only treatment usually required being that which is most calculated to restore the general health of the patient. In some cases it may also be necessary to resort to the local means already detailed, when menstruation appears to have a difficulty in re-establishing itself.

The catamenial function appears to be more especially liable to arrest from accidental temporary influences in those females who present a low degree of sexual vitality, and with whom menstruation appears late and with difficulty. In such constitutions, indeed, it sometimes stops for many months, or even permanently, if no treatment be resorted to, without any apparent cause. Under the influence of decided general and local treatment, the menses will often return for a time, but flag and cease as soon as the treatment is suspended.

If there is no positive disease of the uterus or ovaries, the emmenagogues, such as ergot of rye, savine, &c., may be cautiously tried. The author has known also the married state, especially if followed by conception, produce a complete change in the functional activity of the uterine system, and menstruation become regular and natural. It is in these cases that the application of the nitrate of silver to the cavity of the uterus, or the scarification of its mucous surfaces, has been proposed. The author confesses, however, that he does not think we are warranted in thus interfering with so delicate and sensitive a region of the uterus for such a purpose. In the unmarried female the application of leeches to the vulva, and in the married to the neck of the uterus, answers every purpose, without being open to the same objection.

The development of inflammatory disease in the neck or body of the uterus, or in the ovaries, and of cystic and scrofulous tumours in the ovaries, is one of the most frequent causes of amenorrhœa in those in whom the function has once been fairly established, and especially of partial amenorrhœa. When such lesions exist, they generally give rise to other symptoms which an attentive and well-informed observer may easily recognise. This remark, however, applies more to the uterus than to the ovaries, for important morbid changes are not unfrequently found after death in the latter organs, which, during life, have given little other evidence of their existence than the modification or arrest of the catamenial functions.

In all these cases, the amenorrhœa is merely a symptom of the ovarian or uterine disease. The latter is the condition to be treated, the only indication the amenorrhœa itself supplies being the advisability of having recourse to such local means as are calculated to promote menstruation, whenever nature appears to be making the least effort to establish the menstrual flux.

In vicarious menstruation, our first effort ought to be directed to the restoration of the integrity of the uterine organs, if it be impaired. We should then, by all the means enumerated, attempt to divert the molimen hæmorrhagicum of menstruation from its abnormal to its normal seat. The most important of these means is the abstraction of blood from the vulva or cervix uteri, which should be resorted to every month, a day or two before the vicarious menstruation is expected, and may be repeated after it has begun, should the strength of the patient admit of such a step. By this treatment the menstrual nisus may nearly always be diverted into its natural channel; whereas, any attempt to stop the morbid hæmorrhage, by means applied directly to the organ from which it takes place, might be productive of mischief to the system at large.

ART. 71.—*On Morbid Vascularity of the Lining Membrane of the Female Urethra.* By GEORGE T. GREAM, M.D., late one of the Medical Officers to Queen Charlotte's Lying-in-Hospital.

(*London Journal of Medicine*, 1852.)

Under the name of 'Vascular Tumour of the Orifice of the Meatus Urinarius,' this affection was first described by Sir Charles Clarke, in

his valuable work on the 'Diseases of Women;' a work giving evidence of the highly practical knowledge of that author, and which, although published more than thirty-five years ago, may still be considered as one of the best guides to the diagnosis of this class of maladies.

He writes: "There is in most women a degree of projection round the orifice of the meatus urinarius, and from this part sometimes the tumour arises, to which the above name of the vascular tumour of the meatus urinarius has been applied." I have ventured to refer to this affection under another name, because my own experience, confirmed by that of others, tends to show that it does not always appear as a tumour, but that it may be present under other forms, accompanied by the same general as well as local symptoms.

Dr. Ashwell has correctly described the disease, but he speaks of it more especially as a tumour, and states that it is rarely seen after the cessation of the menses. I am led to think that he is mistaken in this respect for I have witnessed the disease as often in elderly women as in the young.

Dr. Meigs, of Philadelphia, has alluded to the complaint in his volume on 'Females and their Diseases;' but he merely refers to it as a portion of the lining membrane of the urethra, "hypertrophied and inflamed, which may be readily cut off." His observations, however, are contained in a very few lines, in which the importance of the disease is altogether overlooked.

The author is not aware that any other writers have noticed the affection at all; but certainly none have regarded it with that consideration which it calls for, when we consider the suffering attending it, and its liability to return, unless properly treated and entirely removed. The fact that it is one of those diseases which do not frequently come under the notice of medical men, renders the circumstance of its being so little alluded to by authors especially remarkable.

It presents itself under three different forms: the first, most likely, being the incipient stage of the second; and the second, the beginning of the third. But this is only conjecture; for the opportunity of proving it has not yet been afforded. It may be present as a simple vascularity of the lining membrane of the urethra, without any elevation whatever, extending some little distance towards the bladder; the membrane itself being highly florid in colour, and extremely tender when touched, or during the passage of the urine. This is the usual character of the disease, when it is confined within the canal; but Sir Charles Clarke relates the case of a patient in St. Bartholomew's Hospital, in whose urethra there was a tumour of a scarlet colour, nearly filling up the canal. The occurrence of a tumour, however, within the urethra is unusual. This is probably owing to the pressure of the sides of the canal preventing the elevation of the dilated vessels, and to the passage of the urine having a similar effect.

When the vascularity is within the urethra, no morbid appearances present themselves externally; but if the symptoms call attention to the part, and the lining membrane is exposed by making pressure around the meatus, the highly florid appearance will at once be detected.

The second form in which the disease appears, is that of a flattened vascular spot, with but slight elevation, surrounding the orifice of the urethra, highly florid in colour, and exquisitely tender when touched: it is so little elevated, that it can scarcely be called a tumour. The redness extends from it into the canal for some little distance, but the membrane within, although florid in appearance, is quite smooth on its surface; whereas the external spot of vascularity is slightly granulated, because it is not modified by pressure from the sides of the urethra.

In the third stage, the disease consists of a distinct tumour, granulated, and attached, sometimes by a broader base, sometimes by a narrow one, and, in some instances, even by a slender pedicle to the side of the urethra, or just externally to it; and, in almost all cases, some dilated vessels will be seen extending from its base to within the urethral canal.

When there is an actual prominent tumour, the local pain and the constitutional symptoms are greatly increased in severity. In some cases, the peculiar scarlet colour of the part has attracted the notice of the patient; but in many instances, particularly when the vascularity is within the urethra, not only has the actual seat of the disease escaped her observation, but it has also been overlooked by her medical attendant, who has referred to the uterus as the diseased organ, has stated that its cervix was inflamed or ulcerated, and caustic has sometimes for weeks, or months, been applied, without affording the least advantage to the patient.

This vascular disease is not at all to be considered as similar to an affection situated in the same parts, having its origin in a varicose state of the veins, which causes some uneasiness and is accompanied by a mucous discharge, but which does not produce the same acute suffering nor the great constitutional disturbance, nor is the appearance the same. In the vascular disease in question the blood contained in the vessels is arterial, while in the venous enlargement it is dark coloured, and the distended veins have the same appearance which veins have in other parts of the body when in a varicose condition. Attention is first called to the vascular disease, by an uneasy sensation at the lower part of the body, and pain passing down the thighs; and pain when urine is voided, or when the part is touched; slight bleeding also occurs occasionally, owing to the rupture of some dilated vessel, whose covering is always much attenuated. There may be frequent desire to pass urine; and walking causes great suffering; while accompanying these symptoms, there is always copious mucous discharge, which is excessive when the disease appears in the form of a tumour. Owing to which, as well as to the constant uneasiness and frequent acute suffering, the patient becomes emaciated and weak, and it is surprising to find so many and such severe symptoms arising from a disease whose extent is confined within such limited bounds; but there is clear evidence that it does produce them in the fact that, immediately upon the destruction of the vascular spot, or even on its partial removal, a comparative freedom from the symptoms is at once enjoyed.

Upon a digital examination of the vagina being made, great tender-

ness is experienced by the patient at the vaginal orifice, and still more if pressure is made towards the pubes; and bleeding from this part will almost always be induced by the examination. These symptoms necessarily call for further investigation, and the nature of the disease becomes apparent.

The only mode of cure is the destruction of the entire congeries of vessels; and if the smallest part of it is left, the disease will most certainly return. It has been customary to employ excision with scissors, and afterwards to apply potassa fusa, or to use the latter alone for the removal of the complaint. A ligature has also been recommended as a means of removal; but there are objections to both these modes of treatment, which those who have used them will, the author thinks, confidently admit. In order that the scissors may be employed, the vagina must be held open by an assistant; but the spot to be excised is so covered by the pubes that it cannot be sufficiently exposed to ensure the due performance of the operation, and the potassa fusa applied to the bleeding surface is effectual only in those cases in which the disease is very superficial, and by itself this caustic always fails to destroy the part entirely; hence we have a return of the complaint, and a repetition of a most painful operation.

If the disease is within the urethra, these means of cure are totally inapplicable. If the ligature is employed, it may in some cases prove efficient; but in others it would be impossible to effect a cure by means of it, as the part affected could not all be enclosed.

Having several times been called upon to treat cases which had been before apparently cured (by himself and others) by the means mentioned above, the author was led to think of another mode of treatment which would be more successful; and it occurred to him that the application of strong nitric acid, in the manner adopted by Mr. Henry Lee for the destruction of hæmorrhoids (and which proves so successful), would be equally applicable to the vascularity of the female urethra.

Sufficient time has now elapsed since its application in three instances, and yet there is not the least inclination to a return of the disease in them; and as in others, although more recently treated, there is likewise no such disposition, the author is able to speak with some confidence respecting this mode of cure. Its comparative advantages consist in the acid being minutely applicable to each individual part of the affected spot, which it has the power of entirely destroying, whether within the urethra or outside of it; in its producing no fear in the patient as does the anticipation of an operation by a cutting instrument; and in the pain which it causes very quickly subsiding. Dr. Ashwell observes: "The main trouble we encounter in the treatment of these tumours, is their tendency to re-appear. If they are snipped off with scissors, and the part allowed spontaneously to heal, there is every probability that it will repullulate and cause the same symptoms. If these growths are not moveable and attached by a pedicle, I have found that the diligent application of nitrate of silver freely applied over and around them, will eventually get rid of them: but the process of destruction is tedious and attended *with great agony*. It is generally indeed necessary to apply opium to the part after appli-

cation, and to soothe the patient by some morphia or extract of hyoscyamus at night." Now there is no such necessity after the application of nitric acid; but the patient complains of no pain after a few minutes have elapsed, and she is able to walk about without inconvenience.

But there is a difficulty in exposing the part sufficiently, and in preventing the sides of the vagina from collapsing too soon after the application of nitric acid; and this is overcome by the use of a speculum, invented, the author believes, by Mr. Hilton, for the removal of hæmorrhoidal excrescences. A portion of the side of the speculum, extending nearly to its internal extremity, can be removed after its introduction into the vagina, and if this part of it is just under the pubes, the spot of vascularity will project into the tube; but should only the lining membrane of the urethra be vascular, it will be readily exposed by pressing the speculum firmly towards the pubes against the surrounding parts: and the acid can be applied while the pressure is kept up.

A small rod of glass, or a piece of hard wood in the form of the stick of a camel's hair pencil, is the best thing with which to apply the acid; and this should be held to the part for about a minute, care being taken that each enlarged portion of the vessels is completely destroyed, and in about three or four minutes the pain attending it ceases, and the speculum can be removed. It will be better to examine the part in about four days from the time of the application of the acid, and it often will be found healed, with no trace of the complaint left. More frequently it presents an unhealed sore, but an absence of the disease. If, however, there be any vessel remaining having the peculiar scarlet colour, it should be again touched with nitric acid, otherwise the symptoms will rapidly return.

ART. 72.—*On the Uterine Sound.* By CHARLES HIGGINS, M.D., F.R.C.S.

(*Medical Times*, and *Gazette*, Feb. 28, 1852.)

[The late crusade against the instrumental treatment of uterine disease, has elicited several articles in support of such measures; which while they adduce good reasons for the opinions of their several writers, also administer some well-merited rebukes to the sweeping condemnations of their opponents. Dr. Higgins proposes three questions: 1st. What is the uterine sound? 2d. What class of cases is it suitable to? And, lastly, whether its use is justifiable? In reply to the first question, he proceeds to say:]

As recommended by Professor Simpson, the uterine sound is made of German silver, so tempered as to possess due resistance, at the same time that it is capable of being bent to suit different circumstances. The stem is 9 inches long, about the dimensions of a 6 or 7 male sound, tapering and knobbed at the end, somewhat curved, (its flexibility admitting of almost any degree of bending with the hands,) and marked on its convex and posterior surface by various knobs and notches. The first mark (a knob) is placed at $2\frac{1}{2}$ inches from the extremity, and indicates the average length of the uterine cavity; at

3½ inches there is a notch; at 4½ inches a double knob; and so on, a notch or a knob, placed alternately inch by inch, by means of which the operator is enabled, by feeling alone, without visual examination, to obtain the information he is seeking. Such is a brief account of the instrument that I have seen Dr. Simpson invariably use, and of the one in my own possession. For a more detailed description of it I would refer to Dr. Simpson's original paper on the subject, in the 'Monthly Journal of Medical Science,' for 1843, p. 703, &c. And this, too, is the instrument which has been designated an "iron weapon!"—with what semblance or modicum of truth let the profession judge. They who have so described it, have done so in direct and unmistakeable violation of truth, or in wilful and unpardonable ignorance of what they were decrying.

2dly. Let us inquire for what class of cases, and under what circumstances, it is proposed to employ the uterine sound,—premising, that it is to be used with the patient placed either on her back or left side, as in introducing the speculum; one finger is then to be passed up to the os uteri, and with the other hand the sound is to be slipped along the inserted finger, and so up to and through the os uteri,—the depth of its penetration being at once ascertained by the point of the already inserted finger coming into contact with one or other of the irregularities or marks on its posterior surface already described.

It would be quite impossible, in a communication like the present, to instance all the circumstances to which I consider the sound to be applicable; nor is this at all necessary, for my object is not to write a treatise on it, but simply to draw general attention to what I conceive a very useful, but a misunderstood instrument. I shall therefore limit myself to the mention of some of the more common and prominent examples of its application, and such as I have myself been enabled to verify.

In the first place, then, I believe it to be not only highly useful, but an absolute *sine quâ non* in investigating the cause of certain forms of amenorrhœa, viz., where this ailment depends on an abnormally shortened and undeveloped condition of the uterus, frequently accompanying a corresponding want of development in the ovaries.

In a case which fell under my own care, the cavity of the uterus was 1¾ inches long. The patient had not, for many years, if ever, menstruated properly. She had never laboured under entire suppression, but suffered from great irregularity of the function as to time, quantity, and quality. She bore other marks of her condition, such as hair on the upper lip, and scarcely any development of the mammæ,—peculiarities, I believe, commonly attendant on such instances. For years this lady had been uselessly subjected to all sorts of powerful treatment, directed to a restoration of the suppressed function, without a suspicion of her real condition, and at the expense of her general health. After the information obtained by the sound, the indication was to rescue her from all these drastic proceedings, and to substitute, for the former treatment, scarcely anything beyond an imitation of the absent function, in the shape of periodic leechings. She improved, but unfortunately, within three months, sank under an attack of acute pneumonia. What amount of relief she might ulti-

mately have received I cannot pretend to say, as this was the only instance of this kind of amenorrhœa which has fallen under my observation,—perhaps none; but I saw quite enough even here to feel regret that the sound had not been much sooner used; and I am satisfied that in such cases alone its employment is very material. It enabled me, at any rate, to arrive at the "*fons et origo mali*," which had not hitherto been discovered, and to adopt what I think I may fairly call a rational mode of treatment, in lieu of the useless and pernicious one formerly pursued; from which change alone my patient derived as much relief, in a malady of many years' standing, as her untimely death permitted, although the former treatment appeared to have been *secundum artem*.

[Dysmenorrhœa from occlusion of the cervix is another malady for which the use of the sound is called for, and the author narrates a marked case of the kind. In displacements of the womb it is still more valuable, and is, in fact, in some cases, the only satisfactory aid in diagnosis. Of such instances two are quoted by the author. Other illustrations of its important services are thus stated:]

For instance, it forms an important element in distinguishing between internal uterine polypi and inversions of the organ,—a point of diagnosis admitted to be difficult, and no doubt is so, judging from the many and serious errors which have been committed. Here the depth to which the sound would pass within the os uteri would indicate the difference. The sound readily exibits the difference between tumours situated in the posterior wall of the uterus, and retroversion, by the direction which the instrument takes; for instance, if it pass with its point backwards, and through the centre of the tumour, it shows at once that this swelling is the result of displacement, and is not an addition to the organ.

Again, in the early stages of ovarian disease, the enlarged ovary extends into the space between the uterus and the anterior wall of the rectum, and may give rise to the impression of a retroverted uterus; and, as far as I can judge, these two conditions could not be distinguished without the means of ascertaining by the sound—1st, that the uterus is in its normal situation; and, 2dly, that the organ can be drawn away from any existing tumour.

Once more, I conceive that it would be impossible to distinguish clearly a thickened condition of the anterior wall of the rectum from retroversion of the uterus, unless we could, by means of the sound, convince ourselves of the normal condition and situation of the latter organ.

[The last point to which the author refers, is the use of the sound in furtherance of the ends of justice.]

Some years since, a woman was apprehended in Scotland on a charge of infanticide. The accusation, however, could not be brought home to her, from the absence of all very decided proofs of her recent delivery. Two or three medical men examined her, and reported doubtfully. Another practitioner was consulted; and this one, by means of the sound, ascertained the usual enlarged condition of the womb after childbirth, and this fact led to further investigation, which ended in clearly establishing her guilt. I report the case from memory.

[The author does not profess to have followed out the subject to the end. But granting that he has shown that the uterine sound does answer the purposes for which it was intended, a question still remains for consideration, and that is whether its use is justifiable. To this he replies:]

Now, it appears to me, that the answer to this question is contained in the ordinary use of the vesical sound. Had we been called upon, for the first time, to insert an instrument into the interior of deeply-seated organs, then something like a specious objection, or at any rate hesitation, might be exhibited in admitting it into practice; but with the universal employment of vesical sounds of all sorts, sizes, shapes, and materials, staring us in the face, with what semblance of truth are we to condemn, as some have done, and in no measured terms, the use of a similar instrument in another organ? The bladder, like the uterus, is a pelvic organ, deeply situated, lined, like it, by a mucous membrane, but one far more sensitive than that of the uterus—liable like the latter organ to various changes and conditions of its interior—to arrive at a knowledge of which, time out of mind, metallic instruments have been used; and without the employment of which it is believed many of these conditions could not be ascertained. I would, therefore, in all fairness, inquire why every tyro in the profession should be permitted to thrust a firm metallic instrument into the bladder through a long and complicated passage like the urethra, and the accoucheur held up publicly to scorn and condemnation for a judicious use of a parallel instrument constructed of a softer material?

[To this question we do not think a very satisfactory answer will be given by the opponents of the instrument.]

Art. 73.—*On Uterine Granulations.* By M. Chomel.

(*New York Journal of Medicine,* July 1851.)

[The following is an abstract of a clinical lecture, which has been translated by Dr. Barker, from the 'Gazette des Hôpitaux.' The appearance of the lesion is thus described:]

Examined by the speculum, uterine granulations present themselves in the shape of a red spot slightly unequal on the surface, mammillated, having the appearance of grains of millet seed, circular or of incomplete growth. Sometimes they only affect one lip of the os tincæ, especially at the commencement; but generally both are diseased. In some cases of malformation of the uterine orifice, when the antero-posterior diameter of that orifice is greater than its bilateral diameter, the spot may present the appearance of two segments of a circle placed end to end. The edges are generally well defined; sometimes, however, they show slight inequalities. The extent varies according to the duration of the disease; its diameter is from five to ten lines, but the entire surface of the os tincæ is never invaded.

We often meet with a viscous liquid, diaphanous, or slightly opaque in its appearance, between the lips of the uterine orifice, but not of the nature of pus, which is against the theory that this appearance is

ulceration. The surface is rendered bloody by touch, as in coition, the touch of the speculum, &c.

[The symptoms are so well known by the writings of Bennet and others, that we may pass over this portion of Chomel's remarks, and proceed to his observations on diagnosis. On this point he says:]

Diagnosis.—The diagnosis is sufficiently easy when we have the assistance of the speculum to give it certainty. With the touch alone practice is necessary to the recognition of the tumefied state of the neck. Some females complain of no pain; the leucorrhœal affection seems to them habitual, the pains in the loins which they feel they attribute to previous confinements, and it is only a direct examination that can make the diagnosis clear. In young girls from seventeen to twenty years of age, or even younger, among whom we sometimes meet with this disorder, leucorrhœa or hæmorrhages are the first observable symptoms, and, as a speculum examination, or even the touch is painful, aside from their being repugnant to the delicacy of the patients, it is evident that they should only be resorted to as a last extremity, in cases, for instance, where abundant and frequent hæmorrhages have worn out the constitution, and even then, cold baths and astringent injections must be tried before making use of the only infallible remedy, viz., *cauterization.*

With some women, the general symptoms are of very great importance, which, indeed, are never found in the least degree in the yellow depositions in the neck, or either the disseminated red spots without projection, or the hypertrophy of the mucous follicles of the organ. The loss of substance, and the secretion of pus characterising ulceration—the absence of these two phenomena, and, on the contrary, the unequal projection of the granulations, prevent the confounding these two disorders.

It sometimes occurs that the redness is limited to the deep parts of the uterine orifice, and then the speculum itself cannot make it perceptible in certain stages of the malady; but if the general symptoms are present, with hæmorrhages, and the existence of a fibrous or cancerous tumour of the uterus is not proved; if there be a viscous opaque discharge, we have reasons for suspecting the existence of granulation of the os uteri.

[The nature of these granulations is thus stated:]

The capillary vessels of the neck of the uterus are, probably, the seat of the disorder, which seems to consist of their abnormal development. We are the more inclined to think that the capillaries are diseased, as they are easily made to bleed by contact.

[In connection with the foregoing, we make the following extract from the Annual Address before the Connecticut Medical Society, in 1848, by Professor Barker, the translator.]

Granulations of the cervix uteri seem to consist of an hypertrophy of the mucous membrane, or of the numerous follicles which exist in the thickness of this membrane, more abundant in the uterine orifice than every where else. The French in describing it, have used the term framboisée, from the little hard fleshy elevations on the os tincæ, resembling the distinct elevations of the raspberry. So also, some of them speak of it as a granulous or raspberry-like inflammation.

(Inflammation granuleuse ou framboisée.) But this is incorrect; it is not an inflammation but an affection sui generis, peculiar to this organ. The only part of the system in which analogous granulations are found, is the pharynx, as the pharynx alone possesses the same follicular disposition. Neither is it, as some have supposed, a result of inflammation. Inflammations have a period of increase, a period of statu quo, and a period of decrease, to which succeeds the cure. Affections which do not present these three periods may, it is true, offer inflammatory symptoms, but they are not veritable inflammations. Inflammations are those diseases which existing agents exasperate, antiphlogistic means moderate. But this disease has not this character; antiphlogistics do nothing for it. Again, the terms granulous excoriations, granulous ulcerations, have been employed to designate this disease, but they are equally improper. In ulceration there is always a loss of substance more or less extensive. But in the granulated state of the neck of the uterus there is always a relief, a projection, an increase of substance; the prominence is perfectly appreciable to the touch. Furthermore, the granulous state is accompanied by an excretion of glutinous, tenacious, semi-transparent, or sometimes slightly opaque and puriform mucus. Ulcerations, on the contrary, present the veritable pus at the surface without mixture of mucus of any sort. Granulations of the cervix uteri have also, no doubt, been confounded with carcinoma, but they have nothing in common with cancer. Carcinoma uteri commences by the development of globulous tumours upon the neck, which the touch may signalise, but which frequently cannot be seen by the speculum. The granulations, on the contrary, commence in the interior of the neck, and extend by degrees from within to without. Carcinomatous tumours commence externally, going from without to within. Chomel has never known but one female, who commenced by having granulations, in whom it degenerated into a cancer.

Causes.—These are so very obscure, that it is very difficult, not to say impossible, to determine them. Some have said that abuse of venereal pleasure, the repeated contact of the male member, was one of the most frequent. But women of pleasure are not more subject to it than other women. Those who have had children present this affection more frequently, but it often occurs in those who have never borne children. So one may consider pregnancy as a predisposing, but not as an exciting cause. There is one circumstance which the French pathologists have found frequently allied to the existence of these granulations, that is, anterior chronic affections of the skin. A great number of patients in whom these granulations are found have been formerly affected with those diseases of the skin confounded under the name of tetter. This fact has been observed at the Hospital St. Louis, where cutaneous diseases are specially treated. They have found that herpetic affections have preceded the development of uterine granulations in women; in men, granulations of the pharynx, which have been mentioned above as having some analogy with granulations of the neck of the uterus. So it would not be too much to suppose that there exists between them something in common, having the relation of cause and effect.

Symptoms.—The existence of this disease can only be absolutely recognised with the sight, by the aid of the speculum and by the touch. But there are various functional symptoms which would draw the attention of the observing physician to the uterus. There are some derangements in the functions of this organ, or in the groin, pains more or less severe in the side, (more commonly I have observed in the false ribs in the left side,) leucorrhœa more or less abundant, a derangement of the menstrual evacuations, so that the physician is induced to examine the genital organs. There is no heat of the parts, no exaltation of the sensibility. Although there is pain in the parts above mentioned, yet rarely is the suffering augmented by coition, or by the touch. The leucorrhœal discharge is sometimes moderate in quantity, consisting of a thick, tenacious, semi-transparent mucus, resembling the white of an egg, a little beat up. In other and perhaps a majority of these cases, the discharge of albuminous mucus is very abundant, running down the thighs at times when the patient walks, producing a sensation of chilliness. Hæmorrhages are very common in this affection, and they may consist either in an abnormal augmentation of the menstrual flux, or in a proper hæmorrhage between the menstrual periods. The debility and emaciation resulting from the menorrhagia are perhaps the most frequent cause of the patient's seeking medical aid, unless at an earlier period she has been led by the old women learned in these matters to believe that the vague pains in the groins and lumbar regions, and the dragging sensation at the lower part of the abdomen, are caused by falling of the womb.

There is another symptom so common as to merit attention, that is, sensations or pains at the pit of the stomach, which patients frequently describe as "pulling or dragging of the stomach." These sensations, as remarked by Chomel, have this important particular for their diagnosis; as they are sympathetic with the morbid state of the uterus, the presence of aliment in the stomach effects no change in them; while in pains of the stomach, which are idiopathic, the presence of aliment is not at all indifferent. Another phenomenon which coincides frequently with this disposition of the cervix uteri, is the absence of conception, a sort of accidental or symptomatic sterility. It is said that this is not a constant phenomenon, but that there are some who become pregnant not only during the course of the disease, but also during the course of the treatment: but nevertheless in a great majority of cases there is sterility, and in examining with the utmost care, nothing is found in the uterus itself which explains the absence of conception. The question then arises whether these granulations have not something to do with the sterility. When the mucous membrane, which covers the internal surface of the orifice, is tumefied, this tumefaction diminishes by so much the diameter of the orifice, and may oppose the penetration of the semen into the cavity of the organ. Then the viscous, glutinous character of the discharge from this orifice, its physical properties are opposed to fecundation, as the mucus is often so tenacious that it is difficult to raise it with the speculum forceps. Furthermore, it has been remarked by several observers, that women who have been married several years, and who

were found to be affected with this disease, have become enceinte after having been subjected to the appropriate treatment, followed by a cure. Three such instances have occurred in my own practice, two of whom are now mothers, and the third soon hopes to be.

Diagnosis.—This is not usually difficult if we resort to the touch and the aid of the speculum. By the touch we find a portion of the mucous membrane of the cervix uteri feeling softer than usual, something like velvet; and in this portion the granulations are very distinct, as if millet seeds were imbedded in the mucous membrane. Sometimes they attain a size nearly as large as a small pea. The surrounding healthy portion feels smooth, firm, and polished. As this disease always preserves the same disposition, commencing at the centre of the orifice as the point of departure, and extending towards the external circumference of the orifice as it progresses, we shall invariably find the softening and the granular elevations near the centre of the orifice, while the external circumference will retain its normal firmness and smoothness. I believe that this affection never implicates the whole of the cervix. By the touch alone we can then recognise this affection, but as the speculum is absolutely essential to its appropriate treatment, we can then avail ourselves of its important aid in confirming our diagnosis. Indeed, without the speculum, we can neither limit nor define its extent; and even the existence of this state was entirely unknown previous to the invention of the speculum, which permitted one to see a very marked change between the portion around the orifice and the external circumference. The latter offers a pale rose tint, like that of a healthy mucous membrane of the mouth; while, on the contrary, the diseased portion near the orifice is of a reddish violet colour, with the unequal granulated surface very apparent. This is sometimes seen within the orifice itself, extending by degrees to the neighbouring parts. Its progressive development is not constantly the same. Sometimes it extends only to one lip, sometimes to both. Its form also is variable. So then, the two pathognomonic signs of granulation of the cervix uteri are redness, and a granulated, unequal surface, appreciable both to the touch and to the sight. It happens frequently that when the speculum is introduced, one can distinguish but imperfectly the spot of which we have spoken, because a certain quantity of the mucus covers the neck and conceals the granulations. It is necessary then to wipe it away by means of long straight-handled forceps, with a dossil of lint or cotton; and this should be sufficiently large to accomplish the object quickly, and sufficiently soft not to wound the neck of the uterus. It is not always easy to wipe from the neck the mucosities that cover it, they are so viscous, thready, and adherent. By touching with the nitrate of silver, an artificial coagulation is produced, rendering their removal easy.

Treatment.—General or constitutional measures exert no influence over this disease; and, as has been remarked above, antiphlogistics are of no avail. Of all therapeutic means, cauterisation is the only one which has been employed with success. This should always be effected by substances of medium energy; as, when these are used, the physician can always see the diseased part in its normal aspect,

and natural condition. Jobert de Lamballe, at the Hospital St. Louis, generally makes use of the hot iron, the actual cautery; Lisfranc, the acid nitrate of mercury; but Chomel and others prefer the nitrate of silver in the solid state; and it has this advantage—that we are enabled to touch the projecting portions first with the point of the caustic. It has been objected to the nitrate of silver, that in mixing with the vaginal mucosities, it determines a discharge which turns the linen black when suppuration of the eschars takes place, and that it sometimes produces a little discharge of blood. But this sanguinolent discharge is entirely insignificant and without value. Some have recommended injections after the cauterisations, to raise the superfluity of the caustics; but this method is bad, instead of which, we should very gently wipe it off with the dossil of lint. The cauterisations should be repeated a great number of times, or at least until the granular surface has entirely resumed its normal aspect. The day one practises cauterisation, the patient should remain some time in the horizontal position, in absolute repose. This may be repeated every sixth or eighth day, unless, from the effects of the disease and the treatment, the patient becomes so nervous and irritable as to make a longer delay necessary. During the whole period of treatment, such means should be used as the state of the general system may demand.

Art. 74.—*On the Differential Diagnosis of Ovarian Tumours.* By Frederick Bird, M.D.

(*Medical Times*, March 6, 1852.)

[In speaking of the diagnosis of the above lesions the author premises that he does not allude to the disease in its incipient stages, but in the later periods, in which the enlargement of the abdomen is obvious. The diagnosis is divided into differential and special; the former only is considered in the present extract.]

It has been already shown that ovarian tumours may, for a time, evince but few symptoms, or, under certain conditions, may be early attended by acute suffering; and, if the previous history be noted, it will be found that this diversity in symptoms admits of frequent explanation, by reference to the comparative rate at which the morbid development may have proceeded. Ovarian tumours of rapid growth soon indicate their presence by urgent symptoms and concomitant destruction of general health, while in those of slow formation, the burden of disease is so imperceptibly increased as scarcely to be felt until sufficiently great to act as a mechanical cause for suffering. Beyond a knowledge of the duration of the disease, the previous history of ovarian tumour usually affords but little aid to diagnosis; nevertheless, it may often be elicited that inflammatory action, or congestion involving the ovaria, had occurred at an early period, although the fact, even when obtained, does little more than suggest a probable cause for subsequent tumour, and, in very many cases, no such antecedent symptoms may have occurred, or have attracted attention.

The unilateral position of the diseased ovarium has already been adverted to as indicative rather of a complication of the disease than as diagnostic of its character. In the great proportion of instances, the tumour will be found, from the earliest period of its detection, to have been centrally placed, and, in the more advanced period of the disease, when abdominal distension has become considerable, I do not think I have ever observed unilateral position of the tumour, even in a slight degree, unless previous peritonæal inflammation had effected adhesion, by which the morbid growth was prevented from falling into that position in the abdomen in which it would otherwise have occupied; recording an exception, however, in those cases in which a more or less solid tumour is, at its inferior portion, impacted in such a manner in the pelvis as to prevent the upper or abdominal part from occupying a central direction. Of the one hundred cases taken to illustrate these remarks, and to which reference has been already made, it was found that the tumour had preserved a central position in 68 examples; in 14 no sufficiently accurate statement could be obtained, and in the residual 18 the tumour was unilateral. Of these 18 cases, it was subsequently proved, in the course of treatment or autopsy, that peritoneal adhesions were present.

Inquiries into the hereditary tendencies to disease will discover, in a large number of cases, the circumstance of certain members of their family having died from phthisis, and the strumous diathesis will probably be remarked in the sufferers themselves; but there are also many instances in which no such fact can be noted. So it is with reference to age and social position; uncertainty applies to both, and in the search for any peculiar features by which ovarian tumour may be recognised, nothing is discovered in the general symptoms or condition by which its existence can be rendered more than probable. All that at present can be derived from the analysis of cases seems to be the following:—

a. Ovarian tumour is most frequently found in those of strumous diathesis, and phthisis very commonly exists in the collateral branches of the family, and sometimes in the patient herself.

b. Ovarian tumour is more frequent between the ages of 25 and 35 than at any other period of life.

c. Ovarian tumour is more common in those who have been married than in the unmarried.

d. Ovarian tumour is commonly associated with sterility.

e. Ovarian tumour does not necessarily give rise to any symptoms beyond abdominal distension, until very large size has been attained, unless the development and rate of increase have been very rapid, or peritoneal adhesion or pelvic impaction has caused mechanical pressure upon adjacent structures.

Useful as the preceding facts may sometimes be, it is yet obvious that they are wholly insufficient in themselves to conduct to a correct opinion, and the diagnosis has still to be supported by more certain data.

Ovarian tumour, whether formed of one principal cyst, constituting what is not very correctly called the unilocular species, or of many cysts, as in the multilocular type, may vary greatly in size, and

somewhat in shape, but is usually referable to the same figure,—the ovoid, having the fundus more spheroidal, the base more pyriform, or at least forming an arc of a lesser circle than that described by the former,—the outline is generally regular, unless solid matter, or masses of condensed secondary cysts growing internally from the walls of the primal sac, project outwards and produce a nodulose form; but however large the hard portions of a tumour may be, if fluid be also contained within, they seldom cause irregular prominence, and often cannot be felt until after the cystic secretion has been removed by the trocar, when the original figure of the tumour becomes lost. Shape, then, becomes one element in the diagnostic examination, and, as will be hereafter shown, is often of much value.

A certain relative position is also possessed by tumours of the ovary, which they very rarely lose. Unless complicated by peritoneal adhesions, by which the tumour may be fixed unilaterally, that position is central with regard to the lateral regions of the abdomen. The tumour generally rests more or less upon the pelvic brim, and is placed anteriorly to every viscus in the abdomen, with the exception of the bladder, which is lodged in a somewhat triangular space above the symphysis pubis formed by the divergence of the lesser curve of the tumour as it rests upon and is supported by the greater curve formed by the outstretched recti abdominis muscles. The space thus left is often very small, and but little room is permitted for the expansion of the bladder under urinary accumulation, and hence the common symptom of frequent micturition. The relative positions of the ovarium in health and in disease thus become changed; in the former state lying inferiorly and posteriorly to the uterine fundus, and in the latter enlarged by the tumour rising above it, and soon passing forward, leaves the uterus to occupy an inferior and posterior situation. But although, from greatly increased size, the ovarium ultimately becomes anterior to the uterus, yet is the position of the latter organ often otherwise altered—a circumstance dependent upon the variable space interposed between itself and the base of the morbid growth, constituting what is termed a long or a short pedicle; and it will be hereafter shown, that the altered position and direction of the uterus may afford important aid in determining the comparative safety or danger of extirpation. Occupying a relatively anterior position, no alteration in the condition of the other abdominal organs seems to affect that of the enlarged ovarium, and in those examples in which pregnancy supervenes upon ovarian tumour, the uterus still remains behind it, even until the full completion of gestation. On this almost unvarying position of the tumour depends the diagnostic importance of percussion, which ranks as one of the most valuable means brought to the investigation of ovarian disease.

Unless early peritonitis has occurred, which, by its consequent adhesions has bound down and united the small intestines either to the tumour or to each other, they are gradually carried upwards by the increasing size of the diseased growth, and supported by its fundus, and at last compressed into the hypochondrial regions, there to remain (often performing their functions in a very diminished space) until the removal of the fluid portion of the tumour, or its

complete excision, allows them to regain their former and natural position. Frequently their long previous compression prevents them from quickly doing so, and several days often elapse before they escape from the small hypochondrial spaces in which they had become placed, and sometimes not until purgative action has stimulated them to augmented movement; then they descend, and for a time give rise to more inconvenience than when previously displaced. The transverse portion of the colon also, which, when the tumour is of moderately small size, may often be detected resting upon its fundus, is at last, under greater cystic distension, made to take a position posteriorly, and falls to a plane lower than that of the fundus of the tumour, drawing with it the omentum, which, unless of unusual length, or adherent, is seldom found interposed between the anterior wall of the tumour and opposed abdominal surface. Under flatulent distension, the stomach, and probably transverse colon also, rest upon and are supported by the upper margin of the tumour, and thus the greater part of the abdomen is distended by a morbid growth of a certain figure, which, placed anteriorly, rests, to the exclusion of other viscera, against the anterior wall of the abdomen, and becomes bounded above, and in its hypochondrial regions, by hollow and commonly flatulent organs, while in its lateral boundaries are placed the ascending and descending portions of the great and hollow intestine. Perhaps no condition could be more favorable for the employment of percussion as a diagnostic means, and, accordingly, it is found to possess much utility. By its aid the boundaries of the tumour can be distinctly ascertained. Commencing by accurately percussing below, and traversing inch by inch the whole mesian line, uniform and marked dulness is elicited, until a spot is reached at or near to the ensiform cartilage, varying according to the size of the tumour, at which the dulness is abruptly changed for tympanitic resonance, and so clear and distinct is this line of demarcation in the great majority of examples, that the upper boundary of the tumour can be readily mapped out. If next, the same careful percussion be made parallel with the mesian line, from below upwards, on either side of the abdomen, through the lateral regions, the same dulness will be remarked, until a spot near to or below the cartilages of the ribs is reached; then dulness ceases as abruptly as before. This spot on either side of the abdomen will be found to be an inch or two lower than that at which in the mesian line the dulness on percussion ceased; a line traversing these three spots will describe a curve—it is the fundus of the tumour. If the percussion be now made in a line on either side from the linea alba outwards, into the lumbar regions, and a longitudinal boundary between dulness and resonance be thus ascertained by percussion, less marked, it may be, than in the former examination, but still evident; such boundary will mark the position of the lateral portions of that space which is found dull on percussion, they will unite with the curve already detected above, and thus form an ovoid tumour. No position will alter the position of these lines of dulness on percussion.

Art. 75.—*Observations on Pelvic Abscess.*

By Fleetwood Churchill, M.D.

(*Dublin Medical Press*, Jan. 7, 1852.)

[The author describes this disease as occurring under a great variety of circumstances, as follows:]

1. It may occur, not only unconnected with parturition, but in unmarried persons at different ages, and independent of all the ordinary irritants of these organs. A case occurred in the person of one of the nurses at the Meath Hospital, a single woman, about 50 years of age, and without apparent cause. It exhibited the usual symptoms which I shall notice by and by, and ran the usual course, softening and opening into the rectum, after which the patient recovered.

2. I have seen several cases of the disease in married women who never had had children; in two instances it occurred within a few months of marriage; in both the tumefaction was considerable, but both terminated in resolution.

3. In some few cases, it occurs as a secondary complication of severe uterine irritation, apparently from the use of local irritants, the too frequent employment of the uterine sound, the introduction of the pronged pessary, &c.

4. I have seen the disease follow a smart attack of ephemeral fever several times; in one case it terminated in resolution after several weeks; in another in suppuration and evacuation by the rectum; and a third is at present under treatment.

5. It not unfrequently complicates or terminates an attack of simple hysteritis, of which several examples have come under my notice, terminating most generally in suppuration. One such case was the largest abscess of the kind I have ever seen, occupying about one fourth of the abdomen; and in another, at present under my care, the tumour acquired the size of an orange, and after remaining stationary for some months, is now nearly resolved.

6. In certain epidemics of puerperal fever, inflammation of the uterine appendages appears as a special variety, with or without a corresponding affection of the uterus.

It is not unlikely that the disease may occur under other circumstances, but these have each and all come under my own observation, and I can therefore vouch for their accuracy.

With regard to the nature of the disease, as I have said, there is no difference of opinion, it is a phlegmonoid inflammation of these parts, but there is a distinction of some practical value as to the locality and the parts affected. In this respect all the cases I have seen may be divided into two classes:

1. The first and largest exhibits a tumour just above the brim of the pelvis, and closely connected with it, fixed and immovable, extending downwards internally outside the vagina, through the sides of which it can be felt.

2. In the second class the tumour is distinct from the pelvis, rounded, and quite moveable in every direction.

In the latter cases, the inflammation appears limited to the uterine

appendages—*i. e.*, the ovary, broad ligament, and Fallopian tubes. In the former, the soft parts which line the anterior and lateral wall of the pelvis are also involved in addition to the uterine appendages; these are more properly named pelvic abscesses.

I may add, that although either side indifferently may be affected, I think the left side is more frequently the seat of the inflammation.

As to the causes of the disease, it is not easy to be very precise.

1. In certain cases, the abscess is undoubtedly the result of mechanical injury, and the cause is quite intelligible.

2. In others, again, there would appear to be a sort of metastasis of inflammation from the uterus, which in these cases occurs towards the termination of the uterine affection.

3. In a third class of cases, especially when the patient is unmarried, it seems more fairly attributable to cold than to any other cause; but what may be the influence which determines the attack to this region, it is quite impossible to say. In one of the cases to which I have alluded, all the uterine functions had been some time quiescent.

4. Lastly, in puerperal epidemics, when the uterus is involved, we could hardly expect that its appendages would escape; and accordingly we find that they generally share in the disease, though much more remarkably, in some epidemics than in others.

Now, with regard to the symptoms, what I have said must be borne in mind, as to the two varieties of the local affection; the one involving the soft parts lining a portion of the pelvis, and the other limited to the ovary and its appendages, strictly speaking.

The disease may, and generally does, I think, commence by a febrile attack; but this is not always the case. There may be a rigor, followed by heat, or this may be entirely absent. Sooner or later the patient complains of pain or uneasiness in the lower part of the abdomen; but the amount of suffering varies a good deal, and pretty much in accordance with the amount of fever.

If we examine the abdomen carefully, we shall either find a tumour just above Poupart's ligament, of varying size and thickness, and firmly fixed to the pelvis, or a moveable tumour, rounded, firm, and elastic, lying above the pelvis in the abdomen.

In the former class of cases, a vaginal examination adds nothing to our information, as the tumour is out of reach; but in the latter, we can trace it extending more or less down into the pelvis, adding a lateral thickness, extremely tender on pressure. Generally speaking, the uterus is pushed a little to one side, is not tender on pressure, but moving it gives pain. In one or two cases I have seen the uterus fixed and nearly immovable; in one case only have I seen both sides affected. This occurred in a married woman, unconnected with delivery.

In the former class, also, in addition to the pain, tenderness, &c., the movements of the leg of that side are affected; the patient cannot stretch it out straight without great pain, nor can she walk or stand up without bending forward.

In the latter cases the movements of the limb are quite unaffected. This distinction is, I think, of considerable practical value.

The tumour, I have said, varies in size; it is, however, always tender on pressure, and not less so as the disease advances. When it

attains a considerable size, or is attended with much irritation, I have seen the bladder and rectum sympathetically affected; the former more frequently so, giving rise to a frequent desire to evacuate their contents. In only one case have I had reason to believe that the tumour offered a mechanical impediment to the passage of the fæces.

These are the principal symptoms present in a simple case of pelvic abscess; but they, as well as the course of the disease, will vary much according to the extent of the local affection, the amount of constitutional disturbance, and, in some degree, according to the circumstance under which the attack has occurred.

1. In some cases I have seen, the affection had a purely local character. There was the tumour tender, firm, moveable, or immovable; but the pulse was scarcely quickened from beginning to end; the appetite but little affected; the bowels regular, &c. The patient was confined to the sitting or recumbent posture, and suffered pain locally, but that was all.

2. In other cases, the local suffering was very considerable and unceasing; the pulse very quick, at least 120, with sweating at night; utter loss of appetite; irregularity of bowels; no sleep, and great emaciation.

3. Lastly, the cases which occur during an epidemic of puerperal fever will present its general characters in addition to the local symptoms already mentioned.

With more or less of these symptoms, but with the local ones always, the disease runs its course not quickly; often, on the contrary, very slowly, but with an uncertain duration in each case. I do not think I ever saw the tumour disappear or suppurate in less than a month; and I have known it run on to three or four, as in two cases at present under my care.

The disease may terminate either by resolution or suppuration.

1. By resolution. I have seen repeated instances of this termination, both when the tumour is free and when it is attached to the pelvis, though more frequently in the former than in the latter, and much more frequently in those cases where there is but little constitutional irritation. In such cases, the tumour may increase to a certain degree with the symptoms I have described; it then remains pretty stationary for a time, often a considerable time, after which it gradually and slowly subsides. It is worthy of notice, that if the patient be imprudent during this process, the morbid action in the tumour may be re-excited, and the case may terminate in another manner. In one of my cases the tumour had nearly disappeared when the lady's servant became suddenly insane, and so frightened her that the tumour enlarged, and all the symptoms reappeared. The time occupied by the process of resolution is generally considerable. I have two cases under my care at this moment illustrative of this; in one, the tumour, which was free, has all but disappeared, after nearly five months; and in the other, the fixed tumour has considerably diminished after three months.

2. In the majority of cases, however, the tumour suppurates, softens, generally perceptibly, and after a process of absorption of the inter-

vening tissues, terminates by the evacuation of the purulent matter; this formation of matter being generally, though not always, marked by the occurrence of rigors. The channel through which this takes place varies a good deal.

1. In some cases it has been evacuated into the peritoneum, giving rise to peritonitis; but this must, I think, be very rare—at least in upwards of twenty cases which have come under my notice it never occurred. I recollect a case which occurred to my friend the late Dr. Haughton, which now appears to me to have been a case of the kind. The poor woman had recovered badly from her confinement, and some time afterwards, when at the night chair, she felt something give way, and peritonitis immediately followed.

2. Cases are on record in which the abscess opened into the bladder. If I mistake not, I saw one recently in one of the journals; but such cases I believe to be the most uncommon of all.

3. The tumour may soften at its lower part, and the matter may find its way through the coats of the vagina, and be discharged through that canal. I have seen several cases of this termination, the results of which have been very favorable. It has been suggested that we should puncture the tumour in this situation, when the situation of the softening is suitable; nor do I see any objection to the plan. I have, however, not found it necessary.

4. The most common situation, certainly, for a spontaneous opening, is into the rectum, and then the matter will be found discharged along with the stools. On this account, when the tumour is observed to become softer, and we have reason to suspect that matter is formed, the alvine evacutions should be carefully examined. Except when the matter escapes into the peritoneum, no degree of pain seems to accompany its evacuation. It often passes unobserved by the patient, and sometimes seems marked by a sense of relief in the tumour.

5. In a considerable proportion of cases, the tumour approaches the surface gradually and engages the integuments, which become tense, fixed, and sometimes red and shining. Then fluctuation can be felt, the intervening integument is absorbed, and the matter points, as it is called.

The extent of these abscesses superficially is generally not much beyond the size of the tumour at an earlier period, but in some cases I have seen them very large; in one case, scarcely less than one fourth of the abdomen seemed involved. I do not think it would be wise to wait for such an extent of disease, but we ought to open it at an earlier period, and thereby save the patient much suffering.

The symptom which most surely indicates this mode of termination, or rather this locality, is the skin becoming fixed over the tumour, not rolling freely, but being adherent to it.

Diagnosis.—There can hardly be any difficulty in the diagnosis of pelvic abscesses which occur after delivery, and as a part of a more general puerperal affection; the attention being directed to the uterine system, a careful local examination will detect the tumefaction, whether it be fixed or not. If it be situated deep in the pelvis, and scarcely appearing above the brim, still the pain down the leg, and the difficulty of extending the limb, will leave but little doubt.

Perhaps an equally careful examination might be equally successful in the unimpregnated condition; but as the disease is not generally expected under such circumstances, a less minute investigation may, and often does, lead to a false conclusion. I have myself known a case of pelvic abscess pronounced to be a fibrous tumour by very competent authority.

Now the pathognomonic symptoms are, the pain in the tumour and down the leg, the impossibility of standing quite upright, or extending the leg completely, and the tumour detected on external and internal examination.

1. From fibrous tumours it is distinguished by its comparatively quick growth, the amount of uneasiness, and the termination. The former increase very slowly, and insensibly give rise to few or no symptoms, and, above all, are not common in the uterine appendages.

2. In women of a certain age, the filling up more or less of the pelvic cavity might be supposed to result from cancerous deposition; but here we have no general cancerous diathesis, the uterus is always unaffected, and the occurrence of suppuration or resolution solves the difficulty.

3. That one variety of abscess which is unconfined resembles much ordinary ovarian enlargements, at first sight, but it differs in this, at least according to my experience, that it never occurs except in connection with childbirth or miscarriage; and, as a general rule, the growth is much more rapid in the cases under consideration.

The affection, then, may be considered as well marked, and, with care, not difficult of appreciation, but requiring special care and attention when it occurs independent of parturition.

Prognosis.—For so serious an attack, involving such important organs, and liable to such various terminations, the prognosis is very favorable. I have seen more than twenty such cases, and have never seen one in which any unpleasant result occurred. Some fatal cases are on record, but they must be very rare, and probably in consequence of secondary peritonitis.

The disease is, however, very tedious, and may reduce the patient considerably, so that there may be some risk of the incursion of other diseases, if the patient be predisposed thereto.

Treatment.—Whether the attack come on after delivery or independent of it, if we see the patient during the acute stage, it will be necessary to apply leeches over the tumour, these, if required, in numbers according to the amount of irritation and the patient's strength, and to follow them by constant poulticing.

The bowels should be kept quite free, and I have found benefit from small and repeated doses of calomel or blue pill, but not continued so long as to affect the gums.

The diet of the patient during this first period must be low, and I need hardly say that she must be confined to bed.

After we have somewhat subdued the acute inflammation, we must still continue the poultices until suppuration is established; but if the pulse be quiet, we may allow a little better diet, such as chicken broth or beef-tea.

When we are satisfied that suppuration has taken place, that matter

is formed, then our anxiety is as to the place where it is to be evacuated. If by the bladder or intestine, we can do nothing but continue the poultices; but if, on a vaginal examination, we find the tumour soft and the intervening parietes thin, we are advised to make a puncture with a bistoury into the tumour, first ascertaining the presence of pus by an exploring needle. If we succeed, the after-treatment is simple; so long as purulent matter escapes, the poultice may be continued, and occasional pressure made upon the tumour, so as to empty it as much as possible.

But if the tumour enlarges above Poupart's ligament, involves the skin, and becomes soft, with a sense of fluctuation, it must be opened freely in this situation; and it will save the patient some suffering if we make an incision reasonably early. Sometimes a large amount of matter is discharged with great relief, sometimes only a small quantity, but the discharge will continue so long as suppuration goes on. When it ceases, the poultices may be omitted, and some dressing substituted if the wound remains open.

When once the abscess is opened, we may allow the patient a more generous diet, with wine, &c., and in many cases bark may be given with benefit.

But if the tumour shows a disposition to resolve itself, it will be advisable by degrees to leave off the poultices, and substitute cotton wool or flannel. In some cases this process is hastened by a small blister applied occasionally, or by painting the part with strong tincture of iodine, and great benefit and improvement have been found to result from warm hip-baths twice or thrice a week.

Art. 75.—*On the Varieties of Cranial Presentation.*

By J. G. Swayne, m.d., Bristol.

(*Prov. Med. and Surg. Journal*, Feb. 18, 1852.)

[The relative frequency of the varieties of cranial presentation, is a question upon which writers are not agreed, for which reason the author has been induced to bring forward the particulars of a number of cases in his own practice, in all amounting to 286. In classifying these he refers to the four kinds of cranial presentation which are commonly recognised among obstetric authors. In the first of these, which is the ordinary presentation of the head, the occiput of the child is turned towards the left acetabulum of the mother's pelvis; in the second, it is towards the right acetabulum; in the third, towards the right sacro-iliac synchondrosis; and in the fourth, towards the left sacro-iliac synchrondosis. He then goes on to observe:]

With respect to the four presentations, all authors are agreed as to the great frequency of the first, which is the ordinary presentation of the occiput towards the left acetabulum. But there is great difference of opinion as to the comparative frequency of the other three, especially amongst foreign accoucheurs. Thus, the second position, or that in which the occiput presents towards the right acetabulum, is regarded by Baudelocque, and nearly all the French authors, except Dubois, as next to the first in the order of frequency; whereas it is considered

by the late Professor Naegelé and some of the German writers to be the rarest of all. Madame Boivin describes it as occurring in 19 per cent. of her cases, and Madame Lachapelle in 21 per cent.; whereas Naegelé met with it only once in 1210 cases. Most of our accoucheurs implicitly believe with Naegelé in the rarity of this presentation. On the other hand, Dr. Simpson has met with 256 cases of it in 668 cranial presentations. There is the same discrepancy of opinion as to the frequency of the third position, or that in which the forehead is towards the left acetabulum. Naegelé and Stoltz consider it to be the commonest after the first: whereas most of the French authorities consider it to be rare, and place it third in the order of frequency. Naegelé met with 359 cases in 1210, or 29 per cent., whilst Madame Boivin met with only 189 in 20,517, and Madame Lachapelle 164 in 22,243. According to Dr. Simpson it is still more rare, for he met with only one case in 668. There is not so much difference of opinion as to the fourth position, or that in which the forehead is towards the right acetabulum. Most authors consider this to be the least frequent of the two occipito-posterior portions; but this opinion is by no means universal, for Dr. Simpson met with 76 cases of this position, and only one of the third in a total of 668 cases. And Mr. Miller, an American accoucheur, who has lately written on the subject, also considers it to be much more frequent than the third.

The discrepancies pointed out are so striking, that at first sight they might lead to the belief that obstetrical statistics may be made to prove anything, but upon examination it will be found that these differences are more apparent than real. Thus Naegelé considers that nearly all the presentations of the head in the second position were originally, at an early stage of the labour, presentations in the third position, but that as the labour progressed a change in position was effected by the natural efforts, the head rotating so as to bring the occiput round from the right sacro-iliac synchondrosis behind to the right acetabulum in front, which he believes to be the natural termination of presentations in the third position; and he thinks that from this change having been overlooked, the second position came to be considered so frequent by various authors, because what were really examples of the third position were set down as belonging to the second. His doctrines have been generally adopted in this country; but in France, where perhaps greater attention has been paid to the mechanism of parturition, they have met with some opposition. I shall endeavour, as much as possible, to test these conflicting views, by the cases which I shall bring forward. I need not dwell upon those in which the head presented in the first position, as they only confirm what has been universally observed as to the great frequency of that position. In 247 cases out of 286, or nearly 7-8ths of the whole number, the head presented in that way. I find that the second position occurred in 28 cases out of the 286. I am thus led, from my own experience, to coincide with most of the French authors as to the much greater frequency of the second than of the third and fourth presentations.

There is every reason, *à priori*, for supposing that the second presentation, which is in every way the most similar to the first, should

be next to it in frequency; and there is every reason against the probability of its being, as Naegelé considers, the most rare. However, as facts are the only legitimate arguments in discussing such a question, I shall adduce one or two cases in which there could not be the slightest doubt that this presentation was the original one. According to Naegelé, the turn which is described by him as changing the third into the second position, is not effected until the head is fully engaged in the pelvis, until (to use his words) "it experiences the resistance which the inferior part of the pelvic cavity opposes to it." But in two of my own cases there could not be the slightest doubt that the head was in the second position when above the brim. In one of these, (No. 116,) it was necessary to perform craniotomy, on account of pelvic deformity, which prevented the head from entering the cavity of the pelvis. The head was drawn through the pelvis, and delivered in the position in which it presented,—viz., with the occiput towards the right acetabulum. In another, (No. 272,) which happened lately, the head remained so high above the brim, even when the os uteri was fully dilated, as to be out of reach by an ordinary examination; the only part to be felt was one of the hands. Expecting an arm presentation, I introduced my hand into the vagina, for the purpose of turning, if necessary, and, in so doing, ruptured the membranes. I was then able to feel the head high above the pubes in the second position, in which position it descended into the pelvis after the hand had been pushed up, and remained until it was expelled. These instances alone, although but 2 out of 286, show a greater per centage of the second position than the cases of Naegelé, who only records 1 in 1210. But in by far the greater number of the 28 cases which I have noted, I examined minutely at an early stage of the labour, when the head was high, and before the membranes were ruptured, without in any instance detecting that this position was the result of a change from the third.

My own experience with regard to the relative frequency of the third and fourth, or occipito-posterior positions, does not agree with the statistics which are usually given. The third position is generally considered to be the most frequent; but in my own cases there were only three instances of this, and eight of the fourth. This result, however, is not singular; as in Dr. Simpson's cases the difference between the two is still greater. Out of 668 cases he met with 76 of the fourth and only one of the third position. Dr. Millar, the Obstetric Professor in the University of Louisville, U. S., (whose work has lately been reviewed in the 'British and Foreign Medico-Chirurgical Review,') has met with the same result; for he remarks:—"I find by reference to my note-book that the fourth position has occurred in my notes oftener than the third, but both together less frequently than the second."

The third position, as I remarked before, has been considered by Naegelé, and also by Rigby, and other English writers, to be much more frequent than the second; and the cause which they allege for the reputed frequency of the second is, that in nearly all the cases of the second position the head originally presented in the third position, but that this circumstance was not noticed by those in attendance.

From the reason which they assign one would be led to believe that the diagnosis of the third and fourth positions was a difficult matter at the commencement of labour; but this does not accord with all my own experience. I have in general had no difficulty in distinguishing these presentations, before the membranes are ruptured, and even before the os uteri is dilated, by noticing a peculiarity in the shape and position of the os uteri, which, as far as I know, is not described in any book on midwifery. The peculiarity I allude to consists in a depression of the posterior lip of the os uteri, and an elevation of the anterior lip, dependent on the position of the child's head. In ordinary labour the child's head is, at the commencement of the labour, flexed upon its body; but during its progress the head becomes still more flexed by the chin approaching still nearer to the sternum. The result of this is, that the posterior half of the child's head is much lower than the anterior. Consequently, in the occipito-anterior presentations, the occiput being in front presses upon the anterior lip of the os uteri, and depresses it much below the level of the posterior lip. But in occipito-posterior presentations the reverse takes place; the occiput being behind depresses the posterior below the anterior lip. Hence the shape and position of the os, on making a vaginal examination, appear to be very different from that which we ordinarily find. In ordinary cases the finger passes but a slight distance into the angle, or cul de sac, formed by the junction of the vagina and the anterior lip of the os. But in the occipito-posterior positions the finger passes higher up behind the pubes into the cul de sac just mentioned, which in this case forms an acute angle, as in the first it formed an obtuse angle. At the same time the posterior lip, and even the entire os, is unusually low in the pelvis. From noting this circumstance I have been able to detect these presentations at an early period of the labour, and have found, as a general rule, that the head does not make the turn which Naegelé and others describe as the ordinary course of events. That it does so sometimes is, nevertheless, quite certain. In one of my eight cases of the fourth position it was very evident. In this case, as soon as the membranes were ruptured the anterior fontanelle was felt just behind the right branch of the pubes, and the right ear behind and a little to the left of the symphysis. Afterwards, as the head descended, the ear could be distinctly felt during each pain to recede from this position and come round to the right side of the symphysis, and pass backwards almost out of reach, until at last the head was expelled with the occiput towards the left thyroid foramen. Immediately upon its expulsion it regained its former position, with its forehead in front, and looking towards the right acetabulum.

A short time ago I witnessed a similar change of position in a rather difficult case of labour which was attended by one of my pupils, and in which the forehead was originally towards the right acetabulum. But in all the other cases of the third and fourth position, amounting in all to ten, no such turn took place, but the forehead of the child continued throughout the labour in the anterior semicircle of the pelvis. But yet in all these delivery was easily effected by the natural powers, notwithstanding that the head was placed in what is generally

considered an unfavorable position. So unfavorable an opinion had some of the older writers respecting the third and fourth positions, that some of them considered delivery impossible whilst the head was so placed. Levret, Capuron, and Baudelocque maintained that the forceps was always required to finish such labour, unless either the child was unusually small or the pelvis unusually large. Nor are these views peculiar to the older writers. Blundell, who was generally so averse to meddlesome midwifery, nevertheless thought that the assistance of art was necessary in these cases. The necessity of interference was still more strongly insisted on by Dr. J. Clark, of Dublin, and also by Dewees, who went so far as to observe, that a man is "incompetent to practise midwifery in its best manner who cannot detect and change this malposition of the head, and thus abridge, by several hours, the misery and pain of his patient." Such opinions, however, were not universal even amongst the older accoucheurs; for Mauriceau, Smellie, and Denman, relate cases in which the labours terminated favorably by the natural efforts when the head was in this position. Amongst modern authorities, Dugés and Velpeau give instances in which unusually large children were expelled in this manner. Notwithstanding, in most works on midwifery at the present time, these presentations are classed amongst the malpositions of the child as causes of difficult labour, and it is recommended that the position of the child's head should be altered, if possible. My own experience by no means confirms this view, as in all the cases I have noted, the labour was very little, if at all, more tedious than in an ordinary presentation, although I allowed the forehead to continue in the anterior semicircle. In one of these it was necessary to deliver with the forceps, on account of convulsions, but not because the labour was protracted.

I am led from this to conclude, that the difficulties which are said to attend such positions are more theoretical than practical, and that many persons have been led to believe in them, from making comparisons of dried pelves and crania, and measuring the several axes and diameters, without making allowance for the very great alteration which may take place in the shape of a child's head during labour, and by means of which it becomes moulded to the canal which it has to traverse. Thus it has been stated, that in consequence of its shape being more square, the forehead does not adapt itself so well as the occiput to the arch of the pubis, as the head clears the outlet of the pelvis; without considering how materially that shape may be altered by the overlapping of the frontal bones at their suture. It has been likewise stated, that at the moment of expulsion the perineum is put much more on the stretch, and is in no more danger of rupture, because the occipito-frontal diameter of the child's head (which in the occipito-anterior presentation is in relation with the antero-posterior diameter of the pelvic outlet,) is much longer than the trachelo-bregmatic which is in apposition with it in ordinary cases. Here again no account is taken of the great capability which the occipito-frontal diameter has of being lessened by the overlapping of the parietal and frontal bones at the coronal suture. In fact, in all these instances of occipito-posterior presentations, I have noticed that this

shortening actually takes place to a great extent, so that the head is at first so much altered in shape as to be nearly round; whereas in the occipito-anterior presentations the head becomes materially lengthened, especially when labour is at all protracted. In the 11 cases I have noted of occipito-posterior positions, the perineum did not receive the slightest injury, nor did it seem to be more on the stretch than usual. From these observations I am led to conclude, that under ordinary circumstances the occipito-posterior presentations require no artificial assistance; and that, as a general rule, the powers of nature are sufficient to accomplish delivery safely in any cases of vertex presentation.

ART. 76.—*On Uterine Hæmorrhage.* By GEORGE KING, Esq., Bath.

(*Prov. Med. and Surg. Journal,* March 31, 1852.)

The object of this communication is to direct attention to *internal* uterine hæmorrhage, and to bring to notice a few cases that have recently occurred in the author's own practice. This passive or insidious hæmorrhage going on within the cavity of the uterus, whether during pregnancy, at the time of labour, or after the contents of the uterus were expelled, does not seem to have attracted that notice in the practice of midwifery that its importance deserves. That distinguished obstetric physician, Dr. Baudelocque, some years since published a pamphlet, entitled 'Traité des Hæmorrhagies Internes de l'Uterus,' and the cases related by him of concealed hæmorrhage are highly interesting and well worth consulting. The author has not met with any other work entirely on the subject. In internal hæmorrhage we do not meet with those frightful appearances or terrific floodings,—gushing out the vital fluid until stopped by syncope, or nature refuses to supply more—and in this alarming condition it is well known that there is no time for reflection, consideration, or consultation; all our skill and moral courage is at once suddenly taxed, and we must instantly act. Still internal uterine hæmorrhage is equally dangerous, requiring all our attention and the most prompt and energetic treatment; and although it may proceed slowly and unobserved, its effects are, nevertheless, often fatal to mother and child, the latter generally. There may be no external sign of the mischief going on, and its effects on the constitution are not known until repeated faintings take place, the patient becomes exhausted, and the pulse almost extinct. For these distressing and troublesome cases our remedies are but few, and our controlling means very limited. Dr. Blundell remarks in one of his lectures on this subject:—"That it is of rare occurrence, and in the present condition of our knowledge scarcely admits of a remedy." This treatment was made some years since; there has not been any improvement in this branch of our practice. The use of bandages and pressure is more practiced now than it was at the time the Doctor's lectures were published, but the author has no confidence in them. He believes in internal hæmorrhage this kind of treatment does more harm than good.

The following plan of applying pressure in cases of internal or

external hæmorrhage is recommended in a recent volume of the 'Lancet.'—"The accoucheur is directed to take three or four octavo volumes, and wrap them up together in a towel, then lay them longitudinally over the rectus muscle, and place a half-hundred weight upon them." Should there be any blood left in the uterus or pelvis, when these weighty measures are applied, this certainly is a good way of pressing it out, and not unlikely to extinguish life too. While all this preparation is going on, or as the patient sinks, no doubt the flooding stops. The author believes a bandage is a great support to the muscles of the abdomen after labour, and is no doubt a great comfort to the patient, and it will also tend to keep down the uterus within the pelvic cavity, but his opinion is that it has but little effect in restraining or stopping the discharge. Pressure by the hand in order to secure the contraction of the uterus immediately after the delivery, is very useful, and should be done.

The only medical remedies that the author knows of are tincture of opium and the secale cornutum; and mild aperients should be occasionally given, to keep the intestinal canal emptied, to prevent any irritation of the uterus from that quarter. Cold water is also a most valuable remedy in all cases of uterine hæmorrhage. If internal uterine hæmorrhage should occur at an early period of pregnancy—say within the second and third month—it may be restrained by tincture of opium, the recumbent position, and rest of the mind as well as of the body. At a later period, nothing but the removal of the contents of the uterus—no other treatment can be depended upon—will stop it; and this should be done early, before the system becomes affected by the great loss of blood. This operation is, he observes, often delayed too long. Nothing is to be gained in these cases by waiting, as, in all cases, we may be pretty sure the child is dead; and the mother may follow, if we are not very prompt and active in our movements. The only means available for removing the contents of the uterus at this period of gestation is a small hand and the blunt hook. In the last month or during parturition, ergot is the only medicine to be relied on. This is a powerful auxiliary to the uterine pains; but the author thinks that it does not seem to act on the uterus until the liquor amnii, or part of it, is discharged; and he does not expect it would have any influence on an uterus distended by internal hæmorrhage. The secale cornutum seems only to be capable of stimulating the action of the uterus, not exciting it. When the expulsive power of the uterus has been set in motion from natural causes, the ergot possesses the peculiar property of helping it. The last and most frightful, as well as troublesome to the accoucheur and dangerous to the patient, is internal uterine hæmorrhage after delivery. The only contracting power in this case is cold water. This produces contraction of the mouth of the blood-vessels that are open, pouring out their contents into the cavity of the uterus. The sudden application of this simple but most valuable remedy, and the shock to the system produced by it, is no doubt the cause of hæmorrhage ceasing; but much of the efficiency of this powerful agent in these urgent cases is in the mode of applying it. It is not enough to put up a cold napkin in the usual manner, wet with water that has lain a long time

in the bed-room. The water should be procured immediately from the pump or spring, and the napkins saturated with this, and *spread* over the pubes and the whole hypogastric region, and removed and *fresh* ones applied every *two* minutes, till we are sure the hæmorrhage is checked. The repeated shocks produced by this rapid removal of the napkin produce the most salutary effects in these perplexing cases; and while we are trying or looking for more complicated remedies the patient may go off in a fatal syncope. The following cases illustrate and explain some of the circumstances connected with internal uterine hæmorrhage:—

"*Case* 1.—On Saturday morning, September 21st, about four o'clock, I was called up to Mrs. H—, who had engaged me to attend her with her first child. On my arrival she said she had got better, and I was not wanted. I found that she had been roused from her sleep by a flooding, which greatly alarmed her; but she was in no pain. She had arrived at the full period of gestation. I satisfied myself that the discharge had stopped, ordered her an anodyne draught, and left her, with directions that I was to be sent for if the flooding should return before I called. At twelve o'clock I saw her again. There had been no return of the discharge; but the nurse told me her mistress was "rather queerish," and she thought I should soon be wanted. About three o'clock p.m. I was sent for in a hurry, and found the pains coming on regularly, but she seemed unusually faint and weak. On examination I found the os uteri dilating, about the size of a crown piece, and the head presenting. With the next pain I ruptured the membranes. There was not a great deal of water (liquor amnii) discharged. In about two hours after a very fine dead child was born. From its appearance I should say it had not been dead long, as it was exsanguineous and flabby, clearly proving that it had suffered from the hæmorrhage, although the mother was a strong robust young woman. She was very faint for some time after the delivery. There was not the slightest hæmorrhage during the labour. The placenta was expelled without any assistance on my part, about five minutes after the child; but before it was a large, tough, coagulated mass, as big as the child's head, the produce, no doubt, of the insidious internal hæmorrhage. The patient had but little discharge afterwards, and did well.

"*Case* 2.—The same evening, about eight o'clock, I was requested to call on Mrs. R—, who was in the eighth month with her first child. She had been out to tea, and on her return home she felt herself sick, and thought that the green tea which she had drank did not agree with her. She retired to her bedroom; and in the act of throwing up her tea, the waters broke, and rather a large quantity was discharged, with slight pain in the back. For these pains in the back I had been consulted some days before; but I did not prescribe for them. On examination, I found no signs of labour. The uterus was very high up and difficult to get at. The os uteri was not at all dilated. She was frightened and restless. I gave her twenty five drops of tincture of opium. About twelve o'clock she became more tranquil, and I left her. At five o'clock in the morning I was called up. On my arrival the child was born. It was very small, and quite blanched.

There did not appear to be a drop of blood in it. On dividing the head not a drop escaped. I had some difficulty with the afterbirth. Before it came away I had to remove from the vagina a hard black mass, which turned out to be layers of coagulated blood, which I have no doubt had been accumulating from the first time I was consulted about the pains in the back. This patient also got about very well, with the exception of the milk being rather troublesome. It is very clear that in both these cases the internal hæmorrhage was fatal to the child; and from the exsanguineous appearance of the bodies, it must have been from the placenta, and not from the vessels of the uterus, perhaps towards the insertion of the cord into the placenta. Had I ruptured the membranes at my first visit, in the first case, the child might, I believe, have been saved, as the effusion appeared to be recent; but there was then no symptom to demand such treatment; and it would, I think, have been considered bad practice."

Art. 77.—*On Rupture of the Perinæum, and its Treatment.* By Isaac B. Brown, F.R.C.S., &c.

(*Pamphlet.* London, Churchill, 1852.)

The author divides this distressing accident into four kinds or degrees:—

First.—A portion of the distended perinæum may be torn to the extent of an inch from the fourchette. This injury is so trifling, and becomes so small when the parts return to their quiescent state, as to require no particular treatment, and is, therefore, quite unimportant to the patient.

Secondly.—Where the perinæum is torn from the fourchette to the rectum, but not either through the sphincter ani or recto-vaginal septum. If this be noticed immediately after its occurrence, it may be easily managed, by bringing the parts together with sutures, by keeping the thighs in close approximation, and by drawing off the urine by catheter. The author has seen three of these cases, and they all did well under this treatment.

Thirdly.—Where the perinæum, during its state of distension, becomes torn between the constrictor vaginæ and sphincter ani, without lacerating either of these muscles, and the head and body of the child, if small, may, in fact, pass through the opening thus formed.

These cases are rare; by immediately bringing the parts together by suture, the treatment will generally be successful.

Fourthly.—Where the rupture is through the constrictor vaginæ, through the entire perinæum, and sphincter ani, and sometimes also through the recto-vaginal septum. This last form of rupture is the one to which the author specially alludes in the following paper, and illustrates the treatment of by cases terminating successfully.

The *causes* to which these accidents may be fairly ascribed are *three* in number:

1st. Laceration may be produced by a sudden and violent action of the uterus, before the os externum has become dilated.

2d. The continuance of a more moderate degree of pressure in persons of lax fibre.

3d. The improper and injudicious employment of instruments.

There are *three conditions* of the soft parts which the author thinks should be referred to as necessarily existing in concurrence with the above-named causes in the production of these results.

The first is an undilated state of the os externum at the time when a violent expulsive action of the uterus drives the head of the child with bursting force through it.

The second is structural; there is a want of sufficient dilatability of the os externum to allow of the passage of the head, without its tearing more or less, even though the uterine contractions be not powerful.

The third condition arises from the formation of the perinæum. In some women it is so deep, or rather advances so far forward towards the pubis, as to oppose the descent of the vertex, and itself to become distended into a bag, while the os externum remains nearly quiescent, —unaffected by the propulsive efforts of the womb, which are directed against the broad surface of the perinæum, instead of towards the external orifice; in these cases either a sudden or a continuous action less forcible will often rend the part.

Under these circumstances, it is not only necessary to support the perinæum with the greatest care, but to insinuate the thumb and fingers of the right hand through the os externum up to the vertex; this gives not only command of the head, but enables us at the same time to dilate the os externum, and as the head descends to help the distended vagina and os externum over the prominences of the parietal bones; in this way the expulsive force is prevented from being directed principally against the fourchette, at which part the tear generally commences.

The author next describes the deplorable consequences which result from accidents of the fourth kind; after which he refers to the operation which he performs for its relief, illustrating it by the detail of a case in which it was perfectly successful. The operation is thus described:

"We placed her in the position for lithotomy. I then pared off the cicatrices on each side, and mucous membrane, to the extent of an inch backwards into the vagina, and to about two inches in length from the rectum to the vagina within the labia; the edges of the bowel, which were drawn back by the absence of the anterior portion of the sphincter, I also cut away, and brought the whole together by a triple suture, *i. e.*, by passing the suture through one labium at the posterior angle, then through the bowel, and thirdly, through the opposite labium. I then passed two double sutures deeply (at least an inch in depth) through both labia, and fastened them over two quills externally, then I stitched the margins of the labia with small needle sutures; finally, on passing one finger down the vagina and another up the rectum, I found there was a space not in apposition, I therefore introduced another suture through the vagina and rectum, thus making sure of every portion being in close apposition."

[The after treatment of the case consisted mainly in frequent use of the catheter, the exhibition of opium, and a generous diet. It became necessary to divide the sphincter ani subsequently, as also to use the

actual cautery to close a sinus. The author comments upon the case as follows:]

"Now the practical remarks on this case are, *first*,—the importance of making frequent use of the catheter, generally every five or six hours for ten days. I am indebted to my friend Dr. Locock for urging this on me, as he stated that he had seen a very bad case fail at the *first* operation, from not attending to this point; and on the second operation, by attending to it the patient was cured. The greatest care should also be taken that none of the urine escape into the vagina, and trickle down on the united surface, for if it do, the result will almost certainly be, sloughing of the parts which we are anxiously trying to bring together by adhesive inflammation. 2dly, the most important practical point is, keeping the bowels quite quiet,—allowing no action. In this case, I kept them confined twelve days by repeated doses of opium. The third important practical point is, constant personal watching and attention to the wound. I was in constant attendance on this patient for twelve successive nights. I studiously kept her on her side, her hips being on one of 'Hooper's water-cushions.'

"It will be seen that I did not divide the sphincter ani on the day of operation, but a few days subsequently. This, I think, was wrong, and I shall for the future always divide it at the time, so as to prevent any retractile power of the muscular fibres from the very outset. I quite intended to do so before attempting the operation, having understood that Mr. Copeland and Mr. Bransby Cooper recommended it many years ago as an important point in the operation, but was over-persuaded to the contrary. The division should not be at the insertion of the muscle, but through the belly of the muscle, about one third from the os coccygis. It may happen that both sides of the muscle may require division; at present I have found one sufficient. Nothing could prove the importance of this procedure more clearly than this case, for although adhesions took place anteriorly very satisfactorily, still, *prior* to the division of the sphincter, the posterior part seemed drawn asunder *after* the sutures were removed, whereas, immediately on the division, the gaping parts were instantly brought in contact, and steadily kept so.

Art. 78.—*On the Treatment of Vesico-Vaginal Fistulæ.* By Dr. Marion Sims, U. S.

(*American Journal of Medical Sciences*, Jan. 1852.)

[Dr. Sims has published a very long article on this subject, which we abridge to dimensions suitable to the space at our disposal. After alluding to operations proposed by other surgeons, he proceeds to detail his own; claiming originality, 1st, for a method by which the vagina can be thoroughly explored; 2d, for the introduction of a new suture apparatus, which does not cut its way out; 3d, for a self-retaining catheter, which can be worn with comfort during the whole process of treatment. The method of exploring the vagina alluded to is thus described:]

In order to obtain a correct view of the vaginal canal, the patient is placed upon a table about 2½ by 4 feet, on her knees, with the nates elevated, and the head and shoulders depressed. The knees must be separated some 6 or 8 inches, the thighs at about right angles with the table, and the clothing all thoroughly loosened, so that there shall be no compression of the abdominal parietes. An assistant on each side lays a hand in the fold between the glutei muscles and the thigh, the ends of the fingers extending quite to the labia majora; then, by simultaneously pulling the nates upwards and outwards, the os externum opens, the pelvic and abdominal viscera all gravitate towards the epigastric region, the atmosphere enters the vagina, and there, pressing with a weight of 14 lbs. upon the square inch, soon stretches this canal out to its utmost limits, affording an easy view of the os tincæ, fistula, &c. To facilitate the exhibition of the parts, the assistant on the right side of the patient introduces into the vagina the lever speculum,* and then, by lifting the perineum, stretching the sphincter, and raising up the recto-vaginal septum, it is as easy to view the whole vaginal canal as it is to examine the fauces by turning a mouth widely open, up to a strong light. This method of exhibiting the parts is not only useful in these cases, but in all affections of the os and cervix uteri requiring ocular inspection. The most painful organic diseases, such as corroding ulcer, carcinoma, &c., may be thus exposed without inflicting the least pain, while any local treatment may be instituted without danger of injuring the healthy structures. By this method, also, a proper estimate, anatomically, can be had of the shape and capacity of the vagina; for where there is no organic change, no contraction, and no rigidity of it from sloughs, ulcers, and cicatrices, and where the uterus is moveable, this canal immediately swells out to an enormous extent, thus showing its great expansibility.

The Suture.—The suture used by Dr. Sims he calls the "clamp" suture. It is composed of annealed silver wire, the size of horse-hair, and fastened to cross-bars, like the quilled suture. These cross-bars are also silver, or lead highly polished. Properly applied, Dr. Sims states that this suture never ulcerates out, having always to be removed. It may be allowed to remain as long as ten days. After scarifying the edge of the fistula, this suture is introduced as follows, the number depending upon the dimensions of the fistula:

A long spear-pointed suture needle, armed with a silk thread, is introduced half an inch anterior to the scarified edge (in the centre of the fistula first), pushed deeply into the vaginal septum without transfixing it, brought out just before the mucous lining of the bladder, entered into a corresponding spot on the other side of the fissure, and made to emerge into the vagina half an inch above. A loop of this ligature is then secured by the help of a tenaculum, and the needle is withdrawn, to be used as before for as many sutures as are required.

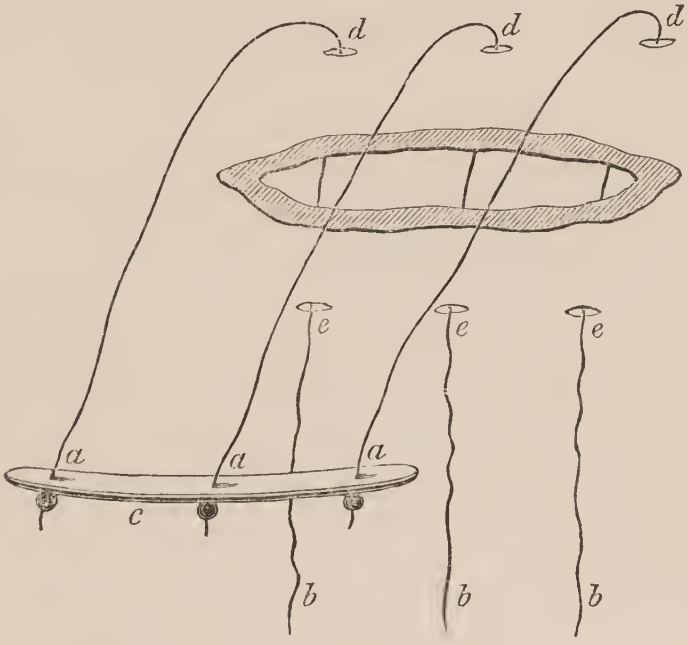
The sutures having been passed, and drawn out so that both ends of each thread hang out of the vulva, each is made to act as the

* An instrument somewhat resembling the angular spatula for inspecting the fauces.

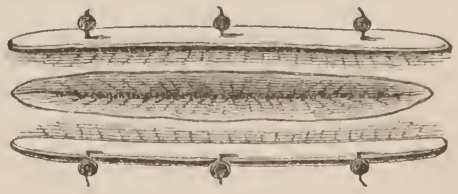
guide for the metal suture now to be substituted. This is done as follows:

Take a piece of the hair wire above mentioned, twelve or eighteen inches long, secured by a band to the silk, which then pull till the wire occupies its place. This is repeated for each. The next step is to fix the sutures by means of the clamps.

The following diagram will assist in understanding this manœuvre as well as the previous steps of the operation.

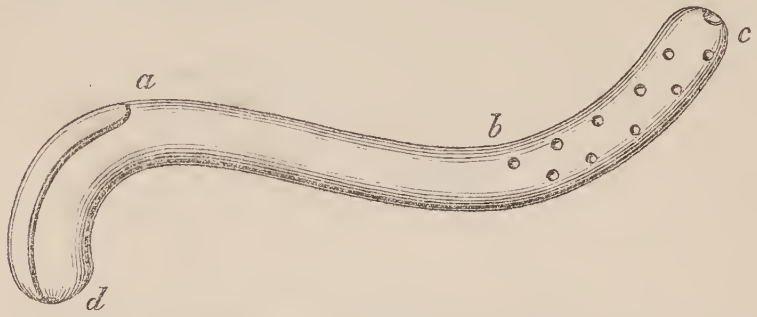


In this figure the wires are represented as passed; the ends *a a a* and *b b b* hanging out of the vulva. The ends *a* are fixed to the cross-bar *c* by being passed through holes and clamped by split shot. This done, the ends *b* are drawn down till the bar is pulled close to the needle holes at *d*, after which it remains to attach a cross-bar to the lower ends of the ligatures, and push it up to the lower needle perforations at *e*. To do this and fix it there it is only necessary to attach split shot upon each ligature, and close them by means of appropriate forceps or pincers. The edges of the fistula are now brought together and retained *in situ* by a clamp on either aspect. It only remains to cut off the wires an eighth of an inch below the shot, and twist the end so as not to injure the mucous membrane. The condition of the parts is thus represented.



Of the Catheter.—The great cause of failure in operations for vesico-vaginal fistula, is the contact of the urine with the scarified surfaces, which has caused Dr. Sims to devise the instrument which he calls the "self-retaining catheter." This instrument is a large

silver catheter curved in opposite directions, as in the accompanying figure, which is the exact size and shape generally required. The end is introduced and lodged up behind the symphysis pubis; the part from *a* to *b* lies in the urethra, while the outer extremity *d* hangs



out at the orifice of the meatus urinarius. This instrument when well fitted to the case is worn with comfort; it never turns or slips out, in any change of posture. The holes should be small.

The after treatment of these cases is next described. "The catheter introduced, and the patient put to bed. A large anodyne should now be given, such as morphia, laudanum, paregoric, or whatever we may know will best agree with the patient. The bowels are to be kept perfectly quiescent, till the success or failure of the operation is ascertained. I have often kept them locked up for three and four weeks without any bad consequences whatever to the general system. In but two instances, that I recollect, have I ever permitted them to be opened under ten or fifteen days from the time of the operation. This is very easily done. Previously to the operation some light laxative medicine must be given: after it, the diet must be of a constipating character. I generally direct my patients to live on tea and crackers, allowing coffee if preferred, and prohibiting meats, fruits, saccharine substances, and all articles of food made of Indian, or common corn meal. Formerly, I allowed as little water as possible; but latterly, since the introduction of silver sutures, and the perfection of the catheter, I have not thought its interdiction necessary. To assist the diet in producing constipation, I order some form of opium in as large doses as can be borne, at least twice in the twenty-four hours. Old fistula cases are generally used to opium; and where they are not, they soon learn its beneficial effects. It calms the nerves, inspires hope, relieves the scalding of the urine, prevents a craving for food, produces constipation, subdues inflammatory action, and assists the patient, doomed to a fortnight's horizontal position, to pass the time with pleasant dreams and delightful sensations, instead of painful forebodings and intolerable sufferings.

"There is not the least necessity for the patient's assuming the erect posture, even for a moment; thus, by diet, opiates, and quietude, a perfect state of constipation can be kept up as long as we could possibly want it in any case. All this facilitates the healing process, which is affected by the "first intention;" or, if it fail, it does so only at one or two points, which may be subsequently closed.

"The catheter is to be removed as often as necessary to keep it

clear of concretions and mucus, which, in a few cases, may be twice a day; in some, once; while in others, it may be allowed to remain two or three days, or even longer. It is to be carefully watched, and must not be permitted to remain long enough to become obstructed. I have seen a failure result from a neglect of this precaution.

"The patient's comfort is greatly promoted, by washing the vulval opening twice a day, or oftener, with warm or cold water, as may be preferred. For this purpose a common bed-pan is placed under the nates, as she lies on her back: when the water may be thrown into the os externum, over the mons, vulva, and inguinal regions, by means of a syringe holding some six or eight ounces. The water has sometimes to be thrown with considerable force to remove the urinary deposits from the nates and genitals. The patient may lie on the back, or on either side, changing her position whenever she pleases; but in no instance is she allowed to rise up in bed.

"Some women are more cleanly than others in protecting themselves and clothing from the urine. Most of them prefer old cloths to absorb it, which are changed as frequently as necessary for comfort.

"On the third or fourth day after the operation, I usually examine the sutures to see if all is right. This must be done with as little exertion on the part of the patient as possible. On the sixth or seventh, I examine them again, and if they are doing no mischief, it is much better not to remove them till the ninth or tenth day. The removal of the clamps is occasionally troublesome, but by a little care it can be done with sufficient ease to both patient and operator. The flattened shots are first clipped off, then by a blunt hook, the anterior clamp is readily elevated from its bed and removed; after which, the posterior one, with the wires attached, may be hooked up, pushed backwards, disengaged entirely, and then lifted out with the forceps.

"This accomplished, place the patient in bed again, and continue the use of the catheter, with the recumbent position, for several days longer, to prevent any strain or traction on the delicate new cicatrix.

"By allowing the patient to get up too soon, and evacuate the contents of the bladder spontaneously, there is danger of rupturing the cicatrix, but by persevering with the catheter and position, till it has time to become well organised, this danger is obviated.

SECT. II.—DISEASES OF CHILDREN.

Art. 79.—*On Infantile Paralysis.* By M. Rilliet.

(*Archives Générales de Médecine.*)

In an Essay by M. Rillict on 'Essential Paralysis of Infants,' we find a large amount of interesting matter, the most practical portion of which we shall endeavour to condense.

1. *Definition.*—The author applies the term "Essential Paralysis"

to more or less complete loss of power, with or without loss of sensation, and unaccompanied by any signs of lesion of the nervous centres. This form of paralysis is often incurable, but does not of itself shorten life, for which reason it is difficult to find its structural causes; for even if the spinal marrow or brain shall exhibit certain lesions, it becomes doubtful whether they are not the results, rather than the causes, of the paralysis.

2. *Seat and Mode of Attack.*—Essential paralysis occurs in three different ways:—sometimes it attacks the patient suddenly in its highest degree, and without obvious cause; at other times it is preceded by cerebral disturbance and convulsions, as during dentition, but in these cases, also, the loss of power is sudden, and not progressive. Thirdly, it may approach gradually.

When paralysis is sudden, and not preceded by cerebral symptoms, it mostly appears in the upper extremities. An infant goes to bed well, and next morning it is found paralysed in one arm. Another sits on the damp ground, and one leg is suddenly discovered to have lost the power of motion. At the same time there is no perceptible derangement of the general health.

When cerebral symptoms precede, these usually consist of somnolence, strabismus, dilatation of the pupil, and headache. These symptoms speedily subside. At other times violent and repeated convulsions occur; these cease, and paralysis is found to have supervened. Paralysis sometimes succeeds chorea, as in the cases cited by Drs. Kennedy and Lee. It also appears in the course of exanthematic fevers, and is then generally discovered for the first time when convalescence commences.

3. *Symptoms and Progress.*—In whatever way infantile paralysis commences, it presents two periods,—one, that of paralysis, the other, that of atrophy. In some fortunate cases the disease does not proceed to the latter extent. The symptoms vary with the part affected. If the arm is the seat of the disease, it hangs lifeless, and if lifted falls again to the side. The paralysis is sometimes complete, at other times limited to certain sets of muscles. In some instances the fingers are flexed upon the thumb.

So also in the lower extremity the loss of power may be complete or partial. If the child does not walk, it kicks the sound leg about, while the other lies motionless. The paralysed limb is not the seat of any pain. The colour and temperature of the skin are often normal. The sensation is generally intact. In fact, the paralysis of motion constitutes the entire malady.

The progress of the disease is not always the same; it may disappear completely and rapidly, or it may persist with or without amelioration. In the latter case, sooner or later, the second period or that of atrophy commences. This is marked by diminution of temperature, wasting of the muscles, and arrest of growth of all the structures together, so that the limb is perceptibly smaller and shorter than the other. In proportion as the temperature diminishes so does the skin change colour, becoming more and more livid.

Fresh observations on the condition of the vessels of paralysed limbs are necessary, but it is obvious that these tubes are involved in the

general atrophy. The pulse at the wrist is, in some cases, scarcely to be felt.

As a further consequence of infantile paralyis, the spinal column becomes variously distorted, and the limbs themselves may be deformed. Thus, in paralysis of the arm, and atrophy of the deltoid, the head of the humerus may be completely dislocated, the weight of the limb stretching the capsular ligament, until it allows the head of the bone to glide out of the glenoid cavity. Such cases are described by West, and one is reported by the author of the present memoir.

Heine has described deformity of the lower limbs thus paralysed, consisting of flexion of the thigh upon the pelvis, and of the leg upon the thigh. The paralysis of one set of muscles, and antagonistic contraction of others, gives rise to the different varieties of club-foot.

4. *Prognosis.*—Essential paralysis does not compromise life, but as it in some cases disappears rapidly and completely, while in others it is perfectly incurable, it becomes important to determine the circumstances which should lead to a favorable or an unfavorable prognosis. This, according to Kennedy, is to be known by the manner in which the paralysis has occurred. The author of the present memoir does not agree in this opinion to the full extent, but he admits the value of the observation as approximative. Thus he thinks we may hope for a perfect cure, when the paralysis has succeeded contraction; also a complete though tardy cure may be expected when it has come on after chorea, or in the course of an attack of fever. The case is more hopeless when the paralysis is preceded by convulsion; so also when the paralysis is gradual in its approach. The result is but little influenced by the part affected. Dr. West considers the prognosis to be greatly influenced by the duration of the affection at the time treatment is commenced. Of six cases of cure reported by him, four commenced treatment within two days of the attack, while eight, in whom no treatment was adopted until the lapse of six months, remained permanently paralytic.

5. *Causes.*—Authors agree that this form of paralysis is more common in the first and second years of life than subsequently. In two thirds of the cases on record, the child was between the ages of six months and two years. However, West, Kennedy, and Heine, have known the disease to attack children as late as five, six, and seven years of age. Sex has no influence on the disease. It is more likely to occur, in the opinion of some writers, in robust and well formed, than in feeble and ill-nourished children, but such is not the author's experience. Among the occasional causes may be mentioned chills and blows.

6. *Diagnosis.*—The diagnosis of paralysis is not difficult, but it is not always easy to say whether the palsy is essential, or symptomatic of lesion of the nervous centres, unless the symptoms of the latter diseases have been well marked. The diseases of the brain which commence in convulsions at the age most liable to essential paralysis, are meningitis, tubercular hydrocephalus, and meningeal apoplexy. The two former diseases are generally accompanied by disturbances of the sensorium, which are not seen in simple paralysis, and are moreover generally mortal. The same may be said of meningeal apoplexy,

which is moreover commonly followed by tonic contraction of the limb. M. Ozanam believes that meningeal apoplexy is the cause of all the cases of paralysis which are preceded by convulsions, but he does not adduce a single fact in support of his theory.

This form of paralysis can be confounded with diseases of the hip only by a very careless observer, and from the progressive muscular atrophy mentioned by M. Aran, it is distinguished by the latter being an affection peculiar to adult life.

7. *Treatment.*—West and Kennedy trust to purgatives and tonics, but allude entirely to the treatment of the stage of simple paralysis. Heine goes deeper into the subject, and endeavours to remedy the stage of atrophy also. The indications of treatment proposed by him are:—

1. To awaken the nervous power of the spinal marrow and nerves of the affected limb. 2. To restore the deformities by orthopedic measures. 3. To invigorate the constitution.

For the fulfilment of the first indication he gives nux vomica internally, and applies it in frictions along the spine. Electricity has failed entirely, but he has been more successful by well-regulated gymnastic movements of the wasted limb. For this purpose various ingenious instruments have been devised which our space will not allow us to particularise.

ART. 80.—*Case of Eclampsia Nutans.* By E. C. BIDWELL, M.D.

(*New York Journal of Medicine*, Nov. 1851.)

[This singular affection has been well described by Mr. Newnham, of Farnham, (see 'Abstract,' vols. IX, p. 207, and XI, p. 280,) but it is so rare that the following additional case is not unworthy of record. Dr. Bidwell says:]

At the age of three months, the subject of the present report suddenly lost the power of motion. She was afflicted at the time with very obstinate costiveness; further particulars not recollected. She was treated with cathartics, &c., and was promptly relieved. About the same time, some of her relatives began to suspect her of deficient intellect; but with the above-mentioned exception, she seemed to enjoy uniform good health; and the parents profess to have noticed nothing wrong with her till she was almost six months old. At that time she was observed, on waking in the morning, and three or four times during the day, to bow or drop her head forwards convulsively. This movement was repeated several times in the course of one or two minutes, and the series repeated three or four times every day. These paroxysms were accompanied by suffusion of the eyes, most marked in the night. There was no expression of pain, and there was, apparently, a momentary loss of consciousness. There was not, at this period, any unusual heat of the head; no flush of the face at any time, which was generally quite pale. The feet were habitually cold; the bowels always costive, and the appetite always good.

With the exception of several slight remissions, of a few weeks, perhaps, the peculiar convulsions increased progressively in frequency

and intensity. When she was one year old, the paroxysms recurred very frequently, almost always soon after waking from sleep, and at other times also, with thirty or forty convulsions in rapid succession in each, and accompanied with a cry as if from pain. By this time it had become evident that her mental development was very much retarded, if not wholly arrested. She had the appearance of a dull child of seven or eight months; but her general health seemed unaffected, and she was able to walk at thirteen months.

Subsequently, her growth was slow, and the intellect evidently retrograded. Gradually, the morbid movement increased in extent: from the slight nod first described, it became a true oriental "salaam," in which the head was drawn suddenly quite down to the floor, with such violence that the forehead and lips were continually bruised and lacerated from the injuries received. At this period there was but one convulsion at a time, lasting but an instant, and attracting no attention from the little sufferer herself, except when attended by severe injury. This was repeated many times during the day. Still later, epileptiform fits were superadded, less frequent, but individually of longer duration. Towards the end of her second year, she was hopelessly epileptic and idiotic. At twenty-six months she died, after a short illness, with febrile symptoms, and a great aggravation of those peculiar to her case.

For the last few months all treatment was discontinued, previous to which time she had passed through the hands of several different practitioners, regular and empirical; had been blistered behind the ears and on the neck; pustulated with tartar emetic; bathed with warm, and showered with cold water, separately and consecutively; had taken tonics, cathartics, vermifuges, alteratives, specifics, and what else I am unable to say, all with no sensible effect, unless, possibly, that while suffering palpably from the drug disease, the morbid motions were less conspicuous. Perhaps none of the temporary amendments or remissions already noted could be fairly attributed to any system of medication to which she was subjected. The parents think that one remedy, and one only, had a decided effect on the disease: the decoction of yellow dock, with a small quantity of bichloride of mercury, was taken for a considerable period, during which the habitual costiveness was entirely obviated, and for the same period the characteristic symptoms were ameliorated. The costiveness and the convulsions returned together immediately on its discontinuance.

ART. 81—*On Atelectasis Pulmonum, or Imperfect Expansion and Collapse of the Lungs in Children.* By J. FORSYTH MEIGS, M.D. (U. S.)

(*American Journal of the Medical Sciences*, Jan. 1852.)

[The anatomical character of atalectasis pulmonum is found under two different conditions:—1. As it exists in young infants, in whom, from imperfect respiration, portions of the lung have never been expanded. 2. As it exists in those in whom respiration has been fairly

established, but in whom, at some indefinite period after birth, the texture of the lung has again collapsed, and returned, so to speak, to its fœtal state. Dr. Meigs reports cases illustrative of each of these conditions. Collapse of the lungs is also met with in older children, and in them gives rise to symptoms and *post-mortem* appearances which have been mistaken for pneumonia. On this important form of the disease Dr. Meigs observes :]

It was not until the year 1844 that the frequency and importance of collapse of the lungs in older children was brought prominently before the medical profession. In that year, MM. Legendre and Bailly published their researches on this subject in the 'Archives Générales de Médecine.' Those gentlemen have shown clearly that, in many cases of pneumonia and bronchitis in young children, a collapse of portions of the lung constitutes a most important part of the diseased condition. They go so far, indeed, as to assert that nearly all the cases of so-called lobular pneumonia are, in fact, cases of bronchitis attended with collapse of a larger or smaller number of the lobules of the lungs.

It is only necessary to read the later essays on the diseases of children to become convinced that a separate and distinct organic affection of the lungs has been heretofore confounded with pneumonia. This organic affection has been shown to be a true collapse of the air-cells, by the very simple experiment of inflating the lungs after death, under which operation the parts of the lung that are collapsed, and which have been heretofore supposed to be affected with lobular or lobar pneumonia, or chronic pneumonia, are seen to expand to their proper size and height, to lose their unnatural density, to regain their proper colour, and, in effect, to be restored, in some instances completely, in others partially, to their physiological and healthful characters. The peculiar character of the lesions constituting this affection had drawn attention for some time before it was properly understood. MM. Rilliet and Barthez had described, in their article on pneumonia, a condition of the lung called carnification, which differed so much from ordinary pneumonia as to create a great difficulty in their minds as to its real nature. So much were they struck with its appearance that they were on the very verge of detecting its real nature; in fact, they did suggest its real nature, but were so possessed with the idea that it must be the result of some inflammatory action as to neglect to pursue their own suggestion, and to endeavour to explain the condition on the ground that it was "one sort of termination of pneumonia or chronic pneumonia." The following passage, quoted from their first volume, page 74, will show how closely they approached the truth: "The first idea that enters the mind on examining this tissue (carnification) is, that it resembles the lung of a fœtus that had never breathed; we would be inclined to say that the pulmonary vesicles had not yet been dilated under the influence of the thoracic expansion, and had not, therefore, admitted air into their interior. Or, rather, it would seem as though they had been obliterated after some attack of disease, perhaps of inflammation, without, however, remaining engorged, and after having lost the power of dilatation." I might cite other authors who have been

struck with the peculiar anatomical appearances met with in many supposed cases of pneumonia and bronchio-pneumonia in young children, but am prevented by the want of space for greater detail.

The lesions found in collapse of the lungs in older children are much the same as those already described in the accounts of the above cases. As this condition of the pulmonary texture has, however, often been mistaken for pneumonia, I will mention here the more important distinguishing features of the two alterations. In the first place, the lung presents a different aspect externally: in atelectasis the altered portion is smooth and shining, and is depressed below the general surface, so that it has a shrunken appearance, and is of a purple or violet colour; in pneumonia, the surface is dull and often roughened by pleuritic inflammation, it is of a brownish-red colour, and, instead of being diminished in volume, is distended. In atelectasis, the tissues retain wholly, or in great degree, their natural cohesive qualities; they are not readily penetrable by the finger, nor are they easily torn, whilst in inflammation they are softened, friable, and easily torn or crushed. In atelectasis, the cut surface exhibits no granulations; in pneumonia, the granulated appearance of a cut surface is constant. Atelectasis is usually found in both lungs; pneumonia, except in the true lobular form, is nearly always confined to one. The secondary lesions of pneumonia, the pleuritic and bronchial inflammations, are absent in atelectasis, except where the latter occurs, as it often does, in connection with, and as a complication of, pneumonia and bronchitis. And, lastly, in collapse the altered portion can be more or less completely inflated by artificial means; whilst in inflammation the hardened and altered parts resist all attempts at inflation.

The most important matters for consideration in a practical view of this form of collapse are its causes, symptoms, and mode of treatment.

Its two chief causes are general debility, and the existence of an obstruction to the entrance of air into the vesicular structure of the lung. A child who is either born weak and feeble, or who becomes so in after years, from exposure to unfavorable hygienic conditions, or from attacks of exhausting diseases, loses the muscular power which is necessary to effect a complete and efficient dilatation of the thoracic cavity; the inspirations, under these circumstances, are short and imperfect, and the portions of lung most distant from the principal air-passages, not being reached by the inspired air, remain in an unexpanded or collapsed state.

The other cause referred to, the existence of an obstruction to the entrance of air, occurs in bronchitis, bronchio-pneumonia, and pneumonia, in which diseases the presence of morbid secretions in the bronchia must impede more or less the transit of the inspired air through those tubes. But it is probable that this result is seldom produced so long as the muscular actions of respiration retain their full force and vigour. When, however, these actions are enfeebled and diminished in force by a state of debility and prostration, it is easy to understand that the more distal portions of the vesicular texture of the lungs will fail to receive their due proportion of air;

since there will here be two conditions at work to bring about this result, namely, an impediment in the air-tubes, and a deficiency in the power of inhalation.

The most important symptoms indicative of the presence of this kind of collapse are the sudden occurrence of short, high, and rapid breathing, with dulness on percussion, feebleness of the respiratory sound on auscultation, and with more or less mucous or sub-crepitant râle. At the same time the general symptoms are those of exhaustion and want of action, rather than those which accompany pneumonic or bronchial inflammation. When the collapse occurs in the course of bronchitis or pneumonia, there will be a sudden increase of the dyspnœa, and a development of asphyctic phenomena, without a corresponding increase of the febrile symptoms. I have met with several cases in which, after the symptoms of bronchitis or pneumonia have subsided at the usual time, and the patient has improved for a while, the above symptoms have made their appearance; the breathing has become again rapid and oppressed; the surface has become pale, or slightly bluish, and cool; the cough has remained stationary or even diminished in frequency; and the child has grown dull, heavy, and inattentive. Formerly I was often very much at a loss to explain the symptoms; of late years, however, I have not hesitated to regard such cases as instances of collapse brought about by the state of debility following the primary acute attack, and have found them to recover under the administration of brandy, Huxham's tincture of bark, nourishing diet, and the use of mustard applications, or stimulating liniments, to the surface of the chest.

A consideration of the causes of this kind of collapse, and of the symptoms which accompany it, will at once point out its proper mode of treatment. The state of general debility on which it depends, the pale, slightly asphyctic tint, and coolness of the cutaneous surface, the muscular weakness, the frequent and feeble pulse, and the drowsy inactive condition of the intelligence, all mark at once the necessity of withholding exhausting modes of medication, and of resorting to stimulants, tonics, nourishing diet, and the different kinds of rubefacients and mild revellents. The patient should be put upon the use of small doses of brandy, of tincture of bark, or of quinine, and upon a diet of milk and broths; while, at the same time, the surface of the thorax ought to be gently irritated by applications of mustard poultices, or by frictions with hartshorn, or oil of amber, and sweet oil.

Art. 82.—*On Catarrhal and Lobular Pneumonia in Infants.* By M. Trousseau.

(*Archives Générales*, and *Medical Gazette*, Dec. 26, 1851.)

The eminent physicians who have written upon acute disease of the chest in children, have clearly pointed out the symptoms, the lesions, and the relative gravity of the inflammations known under the names of lobular pneumonia, capillary catarrh, catarrhal pneumonia, pneumonic catarrh, and simple acute pneumonia. As, however, these accurate notions are scattered throughout voluminous treatises, or

contained in detached and little known essays, the generality of practitioners entertain erroneous notions of the diseases of which we have spoken.

Catarrhal and true pneumonia (*la pneumonie franche*) are in truth as distinct one from the other, as are variola and erythema. We may adduce proof of this from the difference in their mortality. Of twenty children admitted during six months, suffering under acute true pneumonia, not one had died; whilst of thirty children attacked with catarrhal pneumonia, not one had survived. Such diversity in the demonstrated results places these two diseases at an immeasurable distance from each other.

We may state, in order to give this parallel a more striking character, that in true pneumonia the symptoms exibit an excessive activity and acuteness, and then suddenly subside. On the contrary, a certain proportion of cases of catarrhal pneumonia, however mild they may appear at the outset, rapidly assume an uncontrollable severity.

We have elsewhere, and that frequently, traced the groups of symptoms which characterise these two forms of disease; nevertheless we again present a summary thereof.

True pneumonia scarcely ever attacks an infant under two years of age; very rarely does it occur to those between two or three years of age—and it is met with more frequently as the child approaches youth. It has the same characters, signs, and symptoms, as those of acute pneumonia in the adult, as we shall show. After twenty-four or thirty-six hours' existence, the signs of the disease are but little heard, above the breathing sound and bronchophony, except by a crepitant râle, which in the adult is more frequently audible during the act of coughing; while the tubular breathing is heard over a considerable extent, the crepitant râle is seldom heard in infants. There remains in these cases from day to day, when the tubular sound has disappeared, merely a feeble respiratory murmur.

The course of the disease is also much more rapid, at least in children between three and eight years of age, after which period pneumonia differs less and less from that of the adult. The result proves that this is not a very fatal disease; however unskilful the physician may be, he will cure the greater part of his cases, if the attack be slight; however skilful he may be, he will loose an uncertain number when the disease is of a severe character. Children are often brought to the hospital in the fourth, fifth, or sixth days of the disease, and convalescence commences almost immediately. It cannot be supposed that the medical means (sufficiently trifling very often) employed, could have had a notable influence upon the disease. Those who are admitted at the onset of the disease are so speedily cured that we are often disposed to attribute to remedies effects which depend upon the natural mildness of a disease, which, under other circumstances, is attended with a formidable array of symptoms.

We ordinarily perform a venesection from the arm to the amount of from sixty to a hundred and twenty grammes (= 15 to 30 drachms, Eng.); we excite vomiting by a mixture containing from thirty to forty centigrammes (= from 4 to 6 gr. Eng.) of sulphate of copper in fifty grammes (= about 1½ oz. Eng.) of some simple fluid. Thus,

medicine is given once or twice a day during the most acute period of the disease. We then administer a linctus containing from ten to fifteen centigrammes (= about one or two grains, Eng.) of Kermes' (sulphuret of antimony), and the same quantity of extract of digitalis (?). These remedies are discontinued as soon as the pneumonic respiration disappears.

Catarrhal pneumonia does not manifest itself under the same aspect. It begins with catarrh which rapidly extends to the small bronchi, invading in detached parts both lungs, especially behind; the crepitant râles are numerous and fine. These stethoscopic signs are observed for four, six, eight, or fifteen days, without the respiratory murmur being audible. Sooner or later, however, the murmur is heard, when either the cry or the voice is restrained, or at least the breathing sounds are prolonged. While the signs which are common to catarrhal and to pure pneumonia are manifested in one part, the persistence of catarrhal pneumonia in another portion of the lung may be known by the persistence of the sub-crepitant râle. It seems evident that the disease which had commenced in the mucous membrane has extended to the parenchyma of the lung. Although the febrile symptoms are less violent than in true pneumonia, they manifest considerable severity at certain hours in the day, subsiding almost entirely at other times; presenting the changes from better to worse, alternately elevating and depressing hope, and this state lasting for fifteen, twenty, or thirty days. Thus it exhibits the obstinate and uncertain feature of catarrh. The points of lesion becomes multiplied as the disease spreads to different parts; the fever acquires greater severity, the embarrassment of breathing is augmented, and the poor little sufferers sink exhausted, whilst some die more rapidly when the disease has greater severity from the outset, and the lungs have been quickly invaded over a large extent; bleeding, revulsives, antimonials, emetics, belladonna, squills, digitalis, polygala, having been tried without benefit.

The disease has generally a speedily fatal termination when it follows upon measles, to an affection of the skin, or to acute laryngitis.

These two diseases may, *exceptis excipiendis*, be compared in some of their features to the resemblances between erysipelas and phlegmon: erysipelas, like catarrh, passing over the surface, and when it has continued some time, producing ulcerations of the skin, boils, and abscesses, in the same manner that capillary catarrh produces purulent deposits in the structure of the lungs; while pure pneumonia proceeds rather in the manner of simple phlegmon, severe in its inflammatory accompaniments, but terminating quickly and entirely.

An apology may appear necessary, for our having thus dilated upon so ordinary a topic as that of infantile pneumonia, but more than one physician who has only studied diseases of the chest in hospitals for adults, will, perhaps, find in what has now been said, the explanation of facts which have perplexed him. He will understand why the severity of pneumonia differs so widely in children, and, when he shall be able to distinguish catarrhal from true pneumonia, he will be enabled to give a more confident prognosis.

We do not, however, wish it to be supposed that we consider catarrhal pneumonia as invariably fatal. If it be so in hospitals, where impure

air exerts a prejudicial influence, it is not the case in private practice. Here the beneficial effects of frequently repeated emetics, of vesicatories, of antimonials, digitalis, &c., cure at least half of the cases, but at the same time a large proportion proves fatal; for the mortality of that disease is certainly fearfully great, in which one half the cases end fatally.

Art. 83.—*On the Pathology, Modifications, and Treatment of Croup.* By James Bird, a.m., m.d.

(*London Journal of Medicine*, Jan. 1852.)

Few infantile affections more excite the fear of friends or the interest of the medical attendant, than the croupy respiration of children; nor are there any upon which more contradictory opinions are held. In the estimation of some, this alarming and fatal disease is an inflammation of the larynx and trachea, with rapid pseudo-membranous exudation, blocking up the air passages, and extinguishing life; requiring therefore, if we would save our patients, the heroic and decisive practice of bleeding, blistering, and calomel. In the opinion of others, again, it is a spasmodic, nervous, and comparatively harmless complaint; aggravated, rather than relieved, by such debilitating treatment, and requiring for its cure gentle emetics, moderate counter-irritation over the parts which form the seat of disease, aided by quinine, alkaline diuretics, and country air. Such extreme and exclusive views, founded rather on the result, or morbid appearance under which the disease sometimes manifests itself, that on a consideration of the causes and morbid processes of which the exudative form is the consequence, may be truly designated the *mon-oculism* of medical optics; whereby the therapeutist, without chart or compass for his guidance, and with a dim and glimmering knowledge of his course, is sure to wreck the vessel of his professional character. The human organism, on which we habitually exercise our curative skill, is subject to so many contingencies of internal and external influences, which ought to be all duly estimated in our properly exercising the profession of rational medicine, that we need scarcely wonder at the ready acceptance and favour with which the homœopathic aphorism, "Similia similibus curantur," has been received by some of the indolent, the ignorant, and unphilosophical members of what must be a laborious if a scientific profession. In following out its practical part from such principles, the mind must not be singly fixed on the *morphological* characters of diseases, but take into account their *pathogenic* origin, connected, as such may be, with an hereditary or acquired constitutional tendency, influenced by the dryness or humidity of the atmosphere, by season, climate, and locality. From a neglect of such considerations have proceeded much of the scanty information and erroneous views which have been entertained by many respecting croup, which differs in symptoms and morphological results according as the patients are of the plethoric or the anæmic constitution, the sanguine or the nervous temperament, with the consequent disintegrated condition of the blood brought about by humidity of climate or situa-

tion, and previous diseases of constitutional type. Hence, in dry healthy situations, and among children of the wealthier classes, we shall generally have croup, with predominance of spasmodic symptoms, or *laryngitis stridula;* and among the poor, living in low, damp localities, croup will generally present itself associated with diphtheritic exudation, on the fauces or into the windpipe. Much of the discrepancy of opinion which prevails regarding this disease, between the French writers and those of this country, may be traced to a want of consideration of the differences of living, climate, and locality under which the characteristic modifications of croup originate in France and in England. In the former country, and even in America, the greater prevalence of the diphtheritic forms of the disease, proved by their higher rate of mortality, are evidently caused by the low, damp, and malarious nature of the localities, the marshy banks of lakes and rivers, where primary diphtheritic croup has been most commonly observed and described. In England, however, as well as in India, we meet with an idiopathic inflammation of the larynx and trachea, associated with well-developed spasmodic symptoms, stimulating pure "laryngismus stridulus" yet not necessarily terminating by the exudation of lymph into the air passages, when timely subdued by vigorous treatment, but of which heroic depletion by leeches need form no part. Such only promotes the disintegration of the blood, and the separation of its lymph by the mucous membranes; in the same manner probably as fibrinous depositions from the blood take place in cases of *endocarditis.* This, the spasmodic primary croup of some authors, the "laryngitis stridula" of others, occurs among children of rheumatic or scrofulous constitutions; and is accompanied by swelling and redness of the fauces, with copious deposit from the urine of white urate of ammonia. Primary croup, therefore, may be divided into *laryngitis stridula* and *laryngitis membranacea;* these being, however, but stages of the same disease.

The first may be distinguished from *spasm of the glottis,* or *laryngismus stridulus*, by its spasmodic symptoms having been preceded by a catarrhal stage, by hoarse voice, a peculiar ringing cough, sibilant respiration, and crowing sound both during inspiration and expiration. In spasm of the glottis there is no catarrh, no swelling of the fauces, no cough, the voice unaltered, and inspiration only difficult. *Laryngitis membranacea* may be also *secondary*, following either measles or scarlatina; and is characterised by ash-coloured or whitish membranous exudation on the tonsils and palate, extending to the larynx and trachea, and adding thus a formidable complication to the original affection.

Primary croup generally sets in with febrile symptoms, and may be divided into three stages: first, the catarrhal, or febrile stage; second, the spasmodic stage; and third, the stage of exudation.

Catarrhal Stage.—After sneezing, lachrymation, and cough of some days' duration, the child becomes cross and feverish towards evening, the skin hot, the thirst increased, and the pulse frequent, accompanied by hoarseness of voice, or a peculiar ringing cough. If we examine the throat, the tonsils and fauces will be found swollen, red, and vascular, covered by an increased secretion of viscid mucus;

the tongue yellow, loaded, or white and furred, with symptoms of some degree of tenderness in the larynx on pressure. Sometimes these symptoms abate towards morning, and experience an exacerbation towards evening, thus presenting some of the features of infantile remittent fever.

Spasmodic Stage.—The duration of the precursory stage is variable, sometimes lasting a day or two, and sometimes only a few hours. The transition from it to this stage is generally gradual, though it may be sudden and unexpected towards night, particularly when easterly or north-easterly winds are prevailing at the time. The child, who may have gone to sleep as usual, awakes suddenly in a state of alarm with well-marked dyspnœa, stridulous or crowing respiration, and hoarse ringing cough. The face is flushed, the breathing short and hurried, the skin hot and dry, the pulse full and frequent, and the cough suffocative and ringing. The inspiration is prolonged and stridulous, followed by short forcible expiratory efforts. The little patient is fretful and restless, tossing about in much agony, and frequently grasping the throat, as if to remove from it some source of obstruction. Sometimes the stethoscopic signs are of a negative character, but sometimes a sonorous or mucous râle, accompanied by a feeling of vibration under the hand applied to the chest, exists in cases where bronchitis complicates the laryngeal affection. In these instances also, much epigastric tenderness usually marks a considerable degree of gastric irritation.

Stage of Exudation.—The symptoms characterising the second stage, and which, with the fever, increase towards night, may for several days experience a morning remission, continuing the greater part of the day. No decided marks of amendment, however, take place; and while the intermissions become less distinct, the cough more difficult, the voice more suppressed, the respiration is sibilant, accompanied by livor of the lips and countenance, coldness of the extremities, and clammy sweats on the surface; thus marking the advance of the disease, and the period of lymphatic exudation from the mucous surfaces of the larynx or trachea. The agony of oppressed breathing increases, accompanied by a feeling of suffocation, and the child expires in a state of convulsion or of coma.

Complications and Modifications.—In some families, an evident hereditary proneness to this complaint exists, so that all infantile members of them are, at successive periods of life, liable to some of the various forms or modifications of the disease under which it appears in infantile constitutions. Sometimes during teething, these children, who are generally of a lymphatic irritable temperament, have successive attacks of *laryngismus stridulus*, unaccompanied by any marked inflammatory affection of the larynx. At a more advanced period, the same children, when exposed to the morbific influence of external agents, such as cold and moisture, are attacked by more severe affections, or true *laryngitis*, accompanied by severe spasmodic symptoms. The occurrence, also, in advanced infantile life, of an acute inflammatory croup, among plethoric children of sanguine temperaments, may be seen in Scotland, as described by well-known and trustworthy writers; but such is, the author thinks, rather exceptional than

common. He has never seen elsewhere a case of this kind in the course of his experience. The ordinary attacks observed both in India and in this country, have been those commencing with catarrhal affection, cough, fever of a remittent type, and predominant nervous symptoms, caused by inflammatory hyperæmia of the extremely sensible laryngeal mucous membrane, associated with irritability of the laryngeal muscles. The complications with which the author has seen the affection associated, have been gastro-enteritic affection, bronchitis, and diphtheritic exudation both on the tonsils and posterior part of the pharynx. In the gastric complications, the child seemed to have tenderness and pain at the nape of the neck and base of the skull, produced, no doubt, by the peripheral irritation from the stomach and intestines, communicated through the pneumogastric nerves to the base of the brain, and thence reflected on the larynx by its branches, the recurrent laryngeal nerves. With diphtheritic complications of the tonsils and pharynx, the same unhealthy exudative process may extend to the larynx, its mucous membrane being but a continuation of that of the mouth and pharynx. In the author's own practice, however, there has been no experience of this extension, timely attention having been given in all cases to subdue the pharyngeal affection by the application of tincture of iodine to the parts. Bronchitic complication is the one most frequently seen; and as the symptoms of croup or bronchitis may predominate, giving the attack a corresponding and defined character, the medical attendant's attention must be directed to the peculiar characteristics of each, keeping steadily in view, throughout the treatment, whether these merge into well-marked croup, or degenerate into pure bronchitis.

Pathology.—The mucous membrane of the larynx and trachea has, in the generality of cases, been found in a state of bright red hyperæmia; more particularly around the follicular orifices, which pour out, (like the dilated intestinal follicles in like states of dysenteric vascularity,) a thin fibrous membrane, which coagulates on the inflamed surface. This membrane, at advanced stages of the disease, has been found detached by a return of the natural mucous secretion of the part which separates it from the original mucous structure, and prepares it for excretion; as in those cases of dysenteric tubular membranes sometimes detached in diphtheritic dysentery, and which were long supposed to be portions of the original intestinal structure. In the more asthenic forms of the disease, prevailing in large cities and in low, damp, malarious localities, the mucous membrane, which has been found pale beneath the exuded diphtherite, presents ecchymosed patches at its follicular orifices, which are surrounded by an areola of hyperæmiated arborescent vessels, as in other similar states of diphtheritic exudation and disintegrated conditions of the blood associated with low vitality: an index of which may be found at this stage of the disease, in the large quantities of urate of ammonia excreted by the kidneys. Along with the deposition from the blood of its fibrinous elements, and the consequent secretion of them by the mucous crypts, there is a corresponding diminution of the red blood-disks, with accompanying increase of irritability and loss of power in the system. This membranous exudation, which is

characteristic of the disease, is associated with febrile symptoms of a sthenic or asthenic character, according as it is of a primary or secondary origin; but in all cases, the particular type of the fever, and the plethoric or anæmic condition of the patient, must be taken into account, before we presume to come to any opinion as to whether the exudation be of a high or a low degree of vitality, and capable of vascular organisation. In general, it seems to be of the low kind, existing in conjunction with much irritability and spasmodic action of the muscles of the larynx and transverse membranous fibres of the trachea, by which the air passages are momentarily contracted or closed. Such muscular irritability is often much increased, in proportion as cerebral congestion is produced by sources of peripheral irritation, either in the respiratory or alimentary mucous surfaces; giving rise to complications of bronchitis, or to gastro-enteritic disease.

Treatment.—The indications of cure in this alarming disease are, first, to allay the spasmodic irritability of the laryngeal muscles and fibres of the trachea, by which the air passages are contracted, and the respiration rendered stridulous; second, to subdue the inflammatory hyperæmia of the mucous lining of the larynx and air passages, and thus prevent the secretion from its follicles of false membrane; and, third, on the failure of these measures, to procure the discharge of the false membrane, and support the strength.

The *first indication* will be more immediately and best fulfilled by the use of a hot bath; whereby the cutaneous capillary action is greatly increased, and perspiration encouraged, with the effect of subduing the internal hyperæmia and accompanying irritation with which the respiratory and alimentary mucous surfaces are often simultaneously affected; which irritation is reflected on the larynx, through the pneumogastric and recurrent laryngeal nerves. This will be beneficially followed by the free emetic operation of ipecacuan wine, which, while it actively promotes the excretory function of the skin and the bowels, mechanically relieves the vascular congestion existing in the mucous lining of the bronchiæ and throat. If the bowels be not freely moved by this medicine, mercurials, with James's powder and castor-oil, should be given, till their free purgative effect be obtained.

If the croup appear to be of the truly sthenic inflammatory character, leeching may be sometimes had recourse to in fulfilment of the *second indication;* but infantile constitutions being more irritable, and their vascular system more lax than those of adults, the cases which require bleeding are, the author thinks, rather the exceptions; and in large towns more particularly, this measure should be had recourse to with the greatest precaution. In place of local bleeding, counter-irritation of the throat and chest may be produced by turpentine and pyroligneous acid liniments, mustard poultices, or blisters to the parts; though he decidedly gives a preference to the former, as they can be often repeated, just as the state of the symptoms may require. If spasmodic symptoms greatly predominate, they may be also applied from the nape of the neck downwards, between the scapulæ; and in thus tending to relieve cerebral congestion, they particularly promote the fulfilment of the first indication. When

there are signs of the local hyperæmia being followed by secretion of fibrous membrane from the disintegrated state of the blood, solutions of nitre and alkalies united with diuretics, will greatly promote the objects we have in view,—to eliminate from the system excrementitious matter, and thus restore the healthy capillary circulation and nutrition of the part affected, so as to obtain a return of its natural secretion. Infusion of senega, combined with nitrous ether, tincture of squills, and ipecacuan wine, seem also to act beneficially on this principle. The local application of tincture of iodine, or a strong solution of nitrate of silver, particularly where there is diphtheritic exudation on the fauces, will be found of the greatest utility in carrying out this indication.

The *third indication*, (founded on the termination of the disease in its third stage,) may be fulfilled by an occasional repetition of the emetics, the nitre, and the alkaline solutions, or senega infusion, with the addition of counter-irritation on the parts, aided by the administration of wine, proper nourishment, carbonate of ammonia, and other stimulants to prevent collapse. If the exudative process has not at this period extended to the bronchi and pulmonary cells, the propriety of performing tracheotomy becomes a question; and as the operation has saved many lives, it seems not only justifiable but proper, though the success of it be problematical; but, having had no experience of this proceeding, the author refrains from any opinion as to the circumstances in which it should be had recourse to.

Art. 84.—*On Diarrhœa of Infancy.* By Dr. Kunzmann.

(*London Journal of Medicine*, March 1852.)

Dr. Kunzmann, of Löwenberg, in an article published in the 'Journal für Kinderkrankheiten,' for September and October 1851, states that he has arrived at the following conclusions:

1. Cases of diarrhœa in children are to be divided into *sporadic* and *epidemic*.

2. Sporadic diarrhœa arises from various causes, chiefly from such as give rise to irritation or inflammation of some part of the mucous membrane of the intestinal canal.

3. The treatment of sporadic diarrhœa depends on the causes, which must be removed, on the amount of inflammation present, and on the amount of exhaustion which the child has suffered. Special rules cannot be laid down, as the cases vary much; and it will depend much on the sagacity of the physician to determine whether he is to use emetics or purgatives; leeches or fomentations; neutral salts or emulsives; astringents, stimulants, or opiates.

4. Epidemic diarrhœa in children occurs under two principal forms —dysenteric (enterocolitis, enteritis,) and choleriform, (*diarrhœa choleriformis, cholera infantum.*) Less marked cases sometimes occur, and sometimes appear as mild diarrhœa, sometimes as mild gastro-enteritis or colitis, sometimes as diarrhœa with typhoid symptoms.

5. The treatment of these epidemic forms must be much more

decided than that of the sporadic, inasmuch as the type is more strongly defined.

Dr. Kunzmann has had opportunities of witnessing an epidemic of each form of diarrhœa—the dysenteric and the choleroid; and he describes the symptoms which he observed in each form; these, however, will be understood from the designations. The dysenteric form attacked children from three years old to ten; the choleroid, children from five months to ten years.

Treatment.—In the dysenteric diarrhœa, Dr. Kunzmann found no indications for bloodletting; not even when there was active fever, great tenderness of the abdomen, severe colic, and tenesmus, did he deem it proper or advantageous to apply leeches. In very severe tenesmus he used clysters, first of lukewarm water, then of cold water. As an internal remedy, he gave at first small doses of castor-oil; and, when there was very active fever, hot skin, and very severe pain in the abdomen, he alternated this with small doses of calomel, with carbonate of magnesia and gum. When the inflammation has somewhat lessened, and when the skin was cooler and the dejections less copious, he found carbonate of magnesia with bismuth and charcoal very useful. To a child from three to five years old, he gave gr. j or gr. ij of bismuth, gr. iv or gr. v of carbonate of magnesia, and the same quantity of charcoal of poplar wood, every three or four hours. Sponges dipped in cold water were also applied to the anal region. With these remedies, he obtained favorable results.

In the choleriform diarrhœa, observed last summer, the treatment was more difficult. Sometimes the vomiting was so violent, and the children collapsed so rapidly, that there was no time for medicine. Happily, these cases were the exceptions. When the tongue was loaded, and there appeared to be a bad taste in the mouth, emetics of ipecacuanha with oxymel of squills were very useful. In other cases Dr. Kunzmann gave moderate doses of carbonate of soda; and he ha, a very high opinion of this remedy. The inclination to vomit dis minished, and entirely disappeared; and the dejections became feculent- After the vomiting had ceased, fever often supervened, with evening. exacerbations. The carbonate of soda was still continued; but, in the intervals, disulphate of quinine or tincture of cinchona was administered. Dr. Kunzmann gave this, because he believed the disease to be traceable to a malaria; and the results corresponded with his expectations.

Art. 85.—*Treatment of some Infantile Diseases.*
By Dr. Oke, Southampton.

(*Provincial Medical and Surgical Journal.*)

Defective Power of the Lower Extremities in the Second Year of Childhood.—This is a case which often comes under the author's observation, and which, he believes, has been overlooked. The child, instead of being able to stand at the usual time, is found to be unable to bear the weight of the body on its lower limbs, the muscles of which are in some degree wasted and flabby. Upon examining the

spinal column in the sitting posture, a slight posterior curve of the inferior dorsal vertebræ will be discovered, which will at once indicate the cause of the want of power. The following mode of treatment he has commonly found successful: a small blister about an inch and a half long by half an inch broad is to be applied on each side of the curve once in a fortnight; the system is to be supported by prescription No. 1, and the bowels gently corrected once a week by No. 2.

1.—℞ Vini Ferri, ℥xx.
Detur hæc dosis intanti bis quotidie ex aquæ pauxillo.

2.—℞ Hydrargyri cum Creta, gr. ij;
Rhei Radicis Pulv., gr. iv;
Pulveris Cinnamoni Comp., gr. j.
Misce fiat dosis semel in septimanis sumenda.

The child is never to be carried *upright;* and as it will be of great importance to take it into the open air in fine weather, it may be laid upon a small mattress in a concave wicker tray, which will be found light and convenient for the purpose. When left to itself it should be laid on a mattress either upon the floor or upon a bedstead; and this treatment should be continued until it regains sufficient power to attain the upright posture.

Cachexia Purulenta in Children.—This species of cachexy here alluded to is the result of long-continued purulent discharge from external causes. The child is pale, emaciated, and almost exhausted, simply by the quantity of discharge. There is no hectic fever, and the case is curable. The following example will show both disease and treatment:—A child of a year old was brought to me a short time ago from the Isle of Wight, with a disease of the os ilii. It was so reduced and attenuated by the constant discharge from several openings, that there did not appear to be any rational hope of recovery; however, the author ordered fifteen drops of the vinum ferri to be given to it three times a day, with a nutritious diet. In a month he saw the child again, and there was a remarkable improvement, both in the local disease and in its general health; after about the same interval, it was brought to him the third time, when the openings were almost healed, and the child was convalescent. The author is happy to perceive that the London College of Physicians has thought fit to restore the vinum ferri to its place in their new Pharmacopœia, as he has ever found it, in the diseases of children requiring chalybeate medicine, a most convenient and effectual preparation.

Cachexia Eczematosa in Children.—This disease is very common amongst the ill-fed and neglected children of the lower classes. There is a pale and sickly aspect, and on different parts of the scalp the hair is matted together with filthy scabs, of eczematous secretion, from which exudes a thin and irritating discharge. There are also weak ulcerations behind the ears, and about the angles of the mouth, and on the nares, &c. There is no eruptive disease more easily got rid of than this, provided the treatment be carefully carried out. The whole of the scalp having been closely clipped, and the scabs removed

by poultice or fomentation, the eczematous parts are to be smeared by the ointment (1) twice a day, and well fomented before each application. The alterative dose (2) is to be given twice a week, and the strength supported by (3). By these means the removal of the disease will be at once acccomplished.

1.—℞ Unguenti Hydrarg. Nit. Oxidi, ℥ss.
Bis die applicanda digito.

2.—℞ Hydrarg. cum Creta, gr. iij;
Pulv. Rhei, gr. iv;
Pulv. Cinnamonii, gr. j.
Misce fiat pulvis bis hebdomeda sumendus in theriaca.

3.—℞ Quinæ Disulphatis, gr. ij—iij;
Acidi Sulphurici dil., gtt. vj;
Tinct. Aurantii co.;
Syrupi Zingib. Sing., ℥ij;
Aquæ Distillatæ, ad ℥iij.
Misce capiat cochleare largum bis quotidie.

REPORTS

ON THE

PROGRESS OF THE MEDICAL SCIENCES.

January—June 1852.

The intention of the following Reports is to pass in review the principal additions to each department of Medical Science, which have been placed on record during the preceding six months. It is not contemplated that they should be confined exclusively to the notice of what is new; any fact or doctrine which may be considered practically useful, will, although not strictly novel, be regarded as worthy of commemoration. It must be obvious to all who are aware of the immense mass of information which is almost daily put forth by the medical press of this and other countries, that the notice of every subject would be an impossibility. It therefore devolves upon the writers of each Report, to select only such articles for retrospection as may possess superior recommendations, either of an intrinsic character, or in relation to the main end and aim of all medical knowledge—the alleviation of suffering and disease.

I.

REPORT ON THE PROGRESS OF PRACTICAL MEDICINE, PATHOLOGY, AND THERAPEUTICS.

BY THE EDITOR.

Bibliography.

The following works have reached us for notice in the present Report:

I. *Sketches of Brazil, including new views of Tropical and European Fevers, &c.* By Robert Dundas, m.d. Churchill, 1852.

II. *Lectures on the Physical Diagnosis of the Diseases of the Lungs and Heart.* By Herbert Davies, m.d. Churchill, 1851.

III. *Neuralgia, its various forms, Pathology and Treatment.* By Toogood Downing, m.d. London, Churchill, 1851.

IV. *On the Nature and Treatment of Diseases of the Heart, &c.* By James Wardrop, m.d. London, Churchill, 1851.

V. *The Diseases of the Liver.* By George Budd, m.d., f.r.s. 2d edition.

VI. *The Stomach and its Difficulties.* By Sir James Eyre, m.d.

VII. *A Dictionary of Medical Science.* By Robly Dunglison, m.d.

These works will be further alluded to in the several sections to which their contents refer. Of the latter volume we shall here express a favorable opinion; we believe it to be, in truth, a highly useful publication, and the more to be valued, that it is the genuine product of American talent, and not, as is generally the case with transatlantic writings, the pirated reprint of British books.

PART I.—GENERAL PATHOLOGY.

§ I.—*Association and Sequences of Disease.*

1. The address read by Dr. Cooper, of Hull, before the Provincial Medical and Surgical Association, at the anniversary meeting of 1850, affords a comprehensive view of the very interesting and important subject of the alliances and relations of diseased action. In his management of the subject, the author adopts the following arrangement. In the first division he places the diseases which owe their connection to direct mechanical causes, to proximity,

or to the diseased organs being associated in function; secondly he considers those maladies which are associated through the medium of the blood; in a third division, he places the associated diseases of the nervous system; and in a fourth, he enumerates those maladies which are supposed to be mutually exclusive or antagonistic. Among the most interesting examples of this extensive subject, the author speaks of the connection between diseases of the heart and brain, of chorea, and rheumatism, and pericarditis, of diseases of the heart, liver and kidneys, of puerperal fever and erysipelas, and of granular kidney, with numerous secondary inflammations, &c.*

§ II.—*Zymotic Diseases.*

2. *Fever, Large doses of Quinine in.*—In the 'Sketches of Brazil,' by Dr. Dundas, the author opposes the opinion now very generally entertained, that there are two, if not more, distinct forms of continued fever, maintaining, on the contrary, the "essential identity of fever in all countries." He also denies the existence of *Malaria* as a cause of intermittent and remittent fever, and expresses his conviction that the active agent is cold damp air, and especially sea air. We must refer the reader to the work itself for the arguments upon which the opinion is founded. The most interesting remarks, however, of Dr. Dundas, are those in reference to the treatment of fever by large doses of quinine, which form the subject of his seventh lecture. These remarks we shall give in a condensed form.

In the treatment of intermittent fever, of whatever type, the author advises that if the tongue be loaded, an emetic of tartarised antimony should at once be given; after which ten or twelve grains of quinine are to be given, about two hours before the expected access, and repeated after the interval of an hour. If in spite of this the fit supervenes, three grain doses are to be given every three hours after it has subsided, until within three hours of the next expected paroxysm, when the large doses are to be substituted as before.

In the treatment of bilious remittent, he commences at once with ten or twelve grains of quinine every two hours, whatever may be the patient's condition, giving fifteen grains of calomel with the first dose. Where an intermission occurs, which it is said generally to do after the third dose of quinine, the case is to be treated as one of ague.

The treatment of typhus now to be mentioned, originated in the author's conviction of the identity of all fevers; finding that large doses of quinine cut short intermittent and remittent fevers, it occurred to him that it would do the same in typhus. He says on this head, that "the doses as in tropical fevers should be large, ten or twelve grains repeated at intervals not exceeding two hours. Three or four doses will generally induce dizziness and tinnitus aurium, or cause a rapid subsidence of urgent symptoms. In the latter event the patient is to be supported with beef tea, and wine if required, and to take three grain doses of quinine three times a day. If, however, in spite of the administration of five or six large doses, the urgent symptoms persist, and tinnitus supervene, the medicine must be discontinued, and after an interval of five or six hours, the patient should take an emetic; he should then after an interval of four and twenty hours again begin the quinine in large doses." This treatment will, the author avers, in most cases of uncomplicated typhus, be rapidly successful, if commenced early. Later, the benefit will be less certain, as well as if any useful organ be involved.

The above method of treating typhus is so important and altogether so

* Transactions of the Provincial Medical and Surgical Association, vol. xviii.

novel, that it becomes our duty to lay before our readers all the information regarding it, which up to the present time we are able to accumulate. Accordingly we may mention, that in addition to the testimony of Mr. Eddomes, alluded to in our last volume, (p. 227,) Mr. STEELE bears the following testimony.

"I have witnessed the results of various methods of treating fever, in several hundreds of cases in 1847, in our fever hospital and on board the fever ships in the Mersey, but I have never found any remedy or remedies which appeared to me to cut short the disease or modify the symptoms in the same decided manner in which the quinine has done when fairly tried."*

Dr. GEE says, "I beg briefly to state, in the first place, that I have uniformly found it to be a safe method, even where there are severe complications, and that no unfavorable symptoms have resulted from its use."

Dr. STEVENSON, physician to the Birkenhead fever hospital, mentions two cases, whose perilous condition is described in the following words. "Face pale and shrunken, but occasionally flushed, delirious, with convulsive startings, hearing dull; great accumulation of black matter on the teeth; tongue dry and brown; pulse small and rapid; urine and fæces passed involuntarily; one patient had hæmorrhage from the bowels. In both of these all the symptoms had improved on the second day of the quinine treatment, and they recovered." Dr. Stevenson goes on to say that "there is little question this treatment must become general."†

Mr. GLASSBROOK says, "after an extensive trial, I am satisfied that the influence of cinchonism in continued fever is an important discovery. It seems to cut short the disease. I have also tried the system with good effect in erysipelas."‡

Similar testimony is borne by Mr. LISTER.

Dr. HUGHES BENNETT has adopted the quinine treatment in eight cases of typhus, which he records, but with less satisfactory results.§

3. *Intermittent Fever. Sulphate of Bebeerine.*—Under the name of sulphate of bebeerine, there is employed, pretty commonly at the present time at Edinburgh, as a febrifuge, and in the treatment of periodical headaches and neuralgia, a new substance, which is a combination of sulphuric acid with an alkaloid, extracted from the bark and fruit of a true which grows in Guiana, and which is known in England under the name of Green Heart, and in its native country under the name of Bebeeru or Sepiri. Dr. Rodie, a surgeon in the British navy, first discovered, in 1834, the febrifuge power of the bark of bebeeru, and the possibility of extracting from it an alkali, which is its active principle. Nevertheless, Dr. Rodie's observations had met with little confirmation, till, in 1843, Dr. Douglas Maclagan read, to the Royal Society of Edinburgh, a paper upon the bebeeru and bebeerine, in which he related numerous facts in evidence of the febrifuge action of bebeerine; and since that time, a number of English physicians,—*e. g.*, Drs. Watt, Anderson, Bennett, and Simpson have proved the anti-periodic efficacy of this new substance. All have been unanimous in acknowledging, that bebeerine was a tolerable powerful febrifuge, which might be substituted with advantage for the sulphate of quinine, as much on account of its price being less (a price which might be yet much reduced), as on account of the absence of all appreciable physiological action, and, in particular, of headache, vertigo, and confusion, so common after the administering of sulphate of quinine, in somewhat large doses. Such are the facts which have caused M. Becquerel to try the sulphate

* Op. cit. Appendix, p. 430.
† Op. cit.
‡ Op. cit., p. 443.
§ Monthly Journal of Medical Science, April 1852.

of bebeerine in the treatment of intermittent fevers, desirous to contribute, as far as he could, towards the solution of that important problem, the substitution of succedanea for sulphate of quinine. The author regrets, that the facts which he has collected are not sufficiently numerous; but, such as they are, he thinks them worthy of the attention of physicians, in regard to the febrifuge action of sulphate of bebeerine. The sulphate of bebeerine had no apparent action upon the stomach or nervous system, in the cases of intermittent fever which the author submitted to the use of this substance. The patients were in number seven, all males, affected with intermittent fevers, well marked and confirmed, all old, relapsing and obstinate: four of them had fevers contracted in Africa, and complicated with miasmatic cachexia. To give to his experiments all attainable certainty, the author always waited two or three days before resorting to active treatment, in order to see if repose and change of diet would cause the fever to cease; then he gave as an emetic, a scruple of ipecacuanha, and, as a purgative, a bottle of seidlitz water. If after these measures the fever persisted, or became regular, the patients were subjected to the use of sulphate of bebeerine; farther, to render the trials more convincing, the patients were kept fifteen days under observation in the hospital after the fever had ceased in order to determine if they had any relapse.

Of these seven intermittent fevers, five were tertian, two quotidian. In two of the tertians, the sulphate of bebeerine completely failed. In one of these cases, there was given, every second day, in anticipation of the paroxysm, 15 grains of sulphate, repeated eight times, without obtaining any result. In the second case, the author gave, before the attack, 15 grains of sulphate of bebeerine, repeated four times; then an equal number of doses of 30 grains during the intermission. No benefit was obtained. To these two patients, the sulphate of quinine, used only in doses of 9 grains, arrested the first fit; as a precaution, however, the author again administered the same dose twice.

In the other five cases, three tertians and two quotidians, the fever was completely stopped by 15 grains of sulphate of bebeerine in four cases, and by 30 grains in the fifth (a tertian). Of the four fevers, in treating which he did not require to go beyond the dose of 15 grains, (two tertians, two quotidians,) it was necessary to give it in one case for two days, and in the last two, four days. The fits were always notably diminished in intensity. In the fifth case, a tertian, that in which he was obliged to augment the dose, he had given, during three days, the sulphate of bebeerine, to the extent of 15 grains, without result; the fourth day 30 grains were given, with a diminution of the paroxysm; the fifth day also 30 grains, when the fit disappeared.

After keeping these patients in the hospital during fifteen days, to assure himself of the reality of the cure, he dismissed them. Three of them have not returned; a fourth came back four months after, with a tertian fever, which was treated with the sulphate of quinine, the author not having any sulphate of bebeerine at his command. The sulphate of quinine succeeded perfectly. A fifth is reported to have returned since into one of the wards of the hospital; but the author was not able to ascertain that this was true. The author is careful not to found unwarranted conclusions upon the above facts; they are too few to entitle him, in the present state of our knowledge, to place sulphate of bebeerine among the best substitutes for sulphate of quinine. As regards intermitting fevers, he knows very well that nothing is more difficult than to decide upon the therapeutic value of any particular system of treatment. In seeing the long catalogue of medicines of every kind, and even of subtances which appear scarcely of such a nature as to have any action upon the economy all decorated with the name of febrifuge, one must own that, in a great number of cases, it is easy enough to break the chain of circumstances and

conditions upon which the phenomenon of intermittence depends. To form a sure opinion upon the real nature of a new medicine, regarded as an anti-periodic, it is necessary to have collected a very numerous assemblage of facts under every variety of circumstances. But, if we take together the above facts, with those collected by Dr. Rodie at Guiana, those of Dr. Watt in the same country, those of Dr. Anderson in India, and those of Drs. Douglas Maclagan, Simpson, and Hughes Bennett at Edinburgh, it must be admitted, that in the action of sulphate of bebeerine, there is something more than a coincidence; that there is a true curative effect, the results of which entitle it to farther and more extensive trials. As to the relapses, it may be affirmed, that no medicine, even the sulphate of quinine, can secure the patients against a recurrence, especially such patients as come into hospitals, and continually commit errors of regimen and hygiene. The author does not, therefore, attach great importance to the relapses; and he calls upon his professional brethren, to ascertain for themselves the febrifuge qualities of a substance, whose action is so inoffensive, and the introduction of which into practice, if the good effects be confirmed, would realise a great economy in the treatment of intermittent fevers.

§ III.—*Diseases of the Blood.*

4. *Leucocythæmia.*—Under this title Dr. Hughes Bennett has described a particular morbid condition of the blood, which is characterised by an increase in the proportion of the white globules, and has collected 31 cases in which this state was observed in a greater or less degree. In examining the blood, a drop was placed under the microscope, when the red and white corpuscles were seen together, and it was easy to recognise the greatly increased number of the latter. The size of these colourless corpuseles varies considerably, some being twice the size of others. After death the same correspondence was observed, the white globules being especially numerous in the coagulum. Dr. Bennett has examined the blood chemically in six of these cases, with the following results:

The proportion of water varied from 815 to 881; the mean being 885·89. The proportion of solid matters lay between 119 and 184; the mean being 164·10. Proportion of globules between 49·7 and 101·63, the mean being 81·49. The mean proportion of the fibrin was 4·78.

The organs chiefly found diseased after death in these patients, of whom 19 were examined, were the spleen, liver, and lymphatic glands. In 16 out of the 19 cases, the spleen was variously increased in size; which increase was apparently a simple hypertrophy. The alterations found in the liver were cirrhosis, cancer, and hypertrophy, the latter being by far the most frequent. The lymphatic glands were more or less diseased in 13 out of the 19 cases. These glands throughout the system were enlarged in four cases, and scirrhous in three others. The mesenteric glands were particularly affected in two cases, the thyroid in another, and the intestinal glands in a third.

Dr. Bennett endeavours to make out the symptoms by which this state of blood may be characterised, but nothing very definite appears to have been elicited. The following, however, is an analysis of the cases with reference to this point.

Sex.—Of the twenty-five cases, sixteen occurred in males and nine in females.

Age.—The youngest case in which leucocythemia was observed was in a girl aged 9, and the oldest in a woman aged 69 years. In two cases the ages are not stated, but in the remaining twenty-three they may be arranged as

follows:—Under 10 years, one case; between 10 and 20, two cases; between 20 and 30, three cases; between 30 and 40, seven cases; between 40 and 50, four cases; between 50 and 60, three cases; and between 60 and 70, three cases. So far as this analysis goes, the disease would appear to be most common in adult life, and more frequent in advanced age than in youth.

Abdominal swelling.—Greater or less swelling of the abdomen was present in twenty out of the twenty-five cases,—evidently dependent, in the majority of these, on enlargement of the spleen and liver, singly or united. In five cases ascites was also present. In several of the cases there was more or less abdominal pain of tenderness, while in a few the enlargement only produced inconvenience, from its size or weight.

Respiration.—The respiration was more or less affected in twelve out of the twenty-five cases. Of these dyspnœa existed in eight. The respiration is said to have been hurried in one; short in a second; laborious in a third; and slow in a fourth. The disordered respiration appeared to be dependent in some cases on enlargement of the abdomen, and corresponding compression of the pulmonary organs, in others (five cases) it may have resulted from disease of the lungs themselves.

Vomiting was present in seven cases. In two at the commencement, in three it was occasional, in one there was hæmatemesis, and in one it was connected with ulcer of the stomach.

Diarrhœa was present in twelve cases, and in some was the leading symptom throughout the progress of the disease. In the second case for instance, during the six months the patient was in the Infirmary, the bowels were opened from eight to twelve times a day for weeks together. In other cases this symptom only came on latterly, and in a few was not urgent.

Constipation is said to have existed in five cases.

Hæmorrhages.—Extravasation of blood occurred in fourteen out of the twenty-five cases. Of these there was epistaxis in six cases; hæmatemesis in one case; hæmorrhage by stool, including hæmorrhoids, in four cases; hæmoptysis in one case; flooding after delivery in one case, and bleeding from spongy gums in one case. In some of these cases bleeding from the gums or bowels was associated with epistaxis, and this last symptom was observed in some of the best marked cases of the disease, with enlarged spleen.

Dropsy was present, more or less, in thirteen cases, generally dependent on the abdominal tumour. There was anasarca in two cases, ascites in four cases, and œdema of the lower extremities in seven cases.

Fever.—More or less fever was observed in eleven cases, indicated by increase of pulse, loss of appetite, thirst, and heat of skin. It was occasionally present at the commencement, at other times at the termination of the disease. In no case did it exist to any extent, or was long continued. From the frequency of splenic enlargement, it might be supposed by some that the disease was connected with intermittent fever, but that this ever occurred is very doubtful. It is said to have preceded the disease in three cases. In Case 8 the report says, that four months previous to admission there had been intermittent fever, but Dr. Walshe adds, "this point was not sufficiently inquired into." In Case 10 there had been repeated attacks of ague, the last of which occurred nine years before he came under observation, and seven years before the abdominal tumour was perceived. In Case 19 the patient also had laboured under intermittent fever, but seventeen years previous to the commencement of the abdominal swelling. So far as the recorded cases are concerned, therefore, there is every reason to believe that intermittent fever is in no way concerned with the production of leucocythemia.

Pallor of the surface.—An unusual pallor of the surface was observed in many cases, resembling that of anæmia. The conjunctivæ, also, were of a peculiar light blue tint.

Jaundice.—In one case only of all those in which the liver was affected, was jaundice observed.

Emaciation.—In most of the fatal cases emaciation was extreme.

Complications.—Disease of the lung was present in five cases, including one case of bronchitis, one of phthisis, and three of pneumonia. Bright's disease existing in two cases, cerebral hemorrhage in one case; cancer was present in three cases, in one, in the form of an undescribed abdominal tumour (Case 10), in a second, there was cancer of the thyroid body and neighbouring lymphatics, and in a third, cancer of the liver, with ulcer of the stomach, stricture of the urethra, and hydrocele. All these diseases were characterised by their peculiar symptoms, or physical signs during life.*

5. *Pyohæmia.*—The circumstance of symptoms frequently observed after accidents, operations, and parturition, to which the above term is applied, has generally been attributed to the entrance of purulent matter into the blood; but the manner in which it acts has been disputed. The formation of disseminated abscesses was attributed to the mechanical arrest of pus globules, until Mr. Lee called this view in question, and demonstrated the fact that when pus is added to living blood it causes its coagulation, and thus produces a bar to its general circulation. The question being still considered as undecided, Mr. Millington has devised a fresh series of experiments, the results of which he has laid before the Edinburgh Physiological Society. From these it appears that fresh pus added to blood produces immediately firm coagulation, while putrid matters retard it, and cause the coagulum to be soft and friable. When bile is added it seems to prevent coagulation altogether, or nearly so. Such being the effects of these different fluids on blood, he asks the question—What hypothesis will give the most natural explanation of the symptoms and morbid phenomena of the disease now commonly known by the name of Pyohæmia? In reply he enumerates the various current theories: thus, M. D'Arcet has supposed that it is owing to the liquor puris becoming purulent after it has reached the lungs; but M. Sédillot has shown that the serum produces no ill effects when free from putrefaction; and that when putrid, though local diseases are induced, they are *not* of the nature of visceral abscesses, but of gangrene. M. Andral has referred this disease to a decomposition of the serum and the action of ammonia on the blood, rendering it dark and dissolved; but, as the author observes, when the pus is *fresh*, it appears very difficult to understand how the animal matter can be converted into ammonia. And, further, the action of pus on blood is *not* to render it dark and dissolved, but, on the contrary, the crassamentum is firmer than natural. The changes, supposed by Andral to be owing to the entrance of pus into the circulation, are the result, as he has shown by repeated experiment, of the entrance of putrid matter into the blood. A careful perusal of the experiments of M. Gaspard will, the author thinks, satisfy any one that putrid matters exert their action principally on the mucous membrane of the intestines, giving rise to frequent, dark, and extremely offensive evacuations, usually attended with decided relief, and in some instances with entire disappearance of all the symptoms. The opinion of Rokitansky, that pyohæmia is to be referred to a spontaneous change in the blood, is, in his opinion, quite untenable, as we have no evidence that the blood ever becomes diseased spontaneously. The opinion of Mr. Lee,

* Monthly Journal of Medical Sciences, Jan. &c., 1851.

that pus imparts its own condition to the blood, is, he believes, nearer to the truth; but, from a careful observation of the symptoms of the disease, from numerous experiments, and from the number of *post-mortem* examinations that he has attended, the author has been impressed with the belief, that the effects which follow the introduction of pus into the system are such as can be best understood by considering that it acts as a poison; and he thinks its resemblance to other animal poisons in its mode of action can scarcely fail to arrest attention. In many of them, he observes, we have first a local disease (in the case of pyohæmia, this may be a stump after amputation, a diseased bone, that part of the uterus to which the placenta was attached, &c.), upon which secondary affections supervene in the form of violent inflammation in one or more parts of the body. In addition, there is a severe constitutional affection, which is characterised by a peculiar fever.

The opinion that referred the secondary abscesses in the viscera to the mechanical arrest of the pus globules in the capillaries of those organs is next criticised. This opinion, he remarks, was based upon the supposition that the globules of pus were larger than the colourless corpuscles of the blood; but the best proof of the erroneousness of this opinion is to be found in the impossibility of distinguishing the pus globules from the colourless corpuscles of the blood. M. Sédillot has indeed stated that they might be distinguished; but the concurrent testimony of all subsequent observers shows that he was mistaken. The experiments of Mr. Gulliver appear to the author to throw much light on the formation of these visceral abscesses. He found that the introduction of pus into the cellular tissue caused suppuration there more surely than foreign bodies of the most irritating kind; and he expresses the opinion that it determines the nature of the subsequent exudation. The author has witnessed nearly the whole texture of the liver destroyed by abscesses, the result of absorption of purulent matter from the interior of the colon; whilst the other organs of the body, after a careful scrutiny, were found free from all appearance of the same disease. This and numerous facts of a similar kind, in the author's opinion, show that the pus absorbed did not pass the capillaries of the liver, but was arrested there, not mechanically, but owing to vital changes in the blood itself.

In conclusion, the author states his conviction that pus in the blood acts as a poison, but in a manner different to that of any other known poison; and that it requires, to produce these poisonous effects, to be introduced in quantities sufficient to modify the vital properties of the blood.*

6. *Spontaneous Development of Gas in the Blood.*—At a recent meeting of the "Académie de Médicine" of Paris, M. Durand-Fardel read a communication on the spontaneous generation of gas in the blood as a cause of death. His observations were founded on the following case:—A stout lady, in apparently good health, after taking a bath, suddenly complained of exhaustion and oppression in breathing, and in five minutes was a corpse. M. Durand, who speedily arrived, endeavoured to bleed her, but could only obtain a small quantity of blood mixed with bubbles of air. The autopsy took place twenty-two hours after death. There was no appearance of putrefaction; the heart was voluminous, its cavities distended with liquid blood, in all which bubbles of gas were mingled in abundance. The blood which was pressed out of the cavæ was frothy, like soap and water; the whole venous system was filled with blood of the same character. There was no other appearance to account for death; and the author could only account for the presence of the air on the supposition of its spontaneous generation.†

* Monthly Journal of Medical Sciences, Nov. 1851. † Archives Générales, Feb. 1852.

7. *Hæmorrhagic Diathesis.*—The peculiar condition of blood, which is commonly called by the above name, has been made the subject of an interesting paper by Dr. LANGE, containing the tabulated results of an examination of the history of 140 examples. It has hitherto, according to his researches, been only met with in the northern hemisphere, occurring in America between 30° and 45° N. latitude, and in Europe between 45° and 60° N. latitude. Germany is among the countries most liable to it, and especially so along the course of the middle Rhine and the Maine. The coasts are far less liable than are inland regions. The inhabitants of mountainous districts are less liable than those of plains traversed by rivers. Vine countries are very liable.

The subjects of the disease do not attain great age; for among 140 examples only nine were aged more than fifty, the female sex seeming to possess less power of endurance than the male. The causes giving rise to the hæmorrhage have usually been insignificant, as, *e. g.*, scratches, cuts, leech-bites, extraction of teeth. When the bleeding is *spontaneous*, that from the nose is most frequent and oftenest fatal. *Vomiting of blood* is much more rare; and it is remarkable, that only one of the fatal cases arose from *hæmoptysis*—the disease indeed seeming to have no affinity with tuberculosis. In one case vaccination gave rise to profuse bleeding, without, however, preventing the rising of the vesicle. The statement of Fordyce and others, that deep wounds bleed less freely than superficial, is not confirmed; but the healing of all kinds of wounds is very tedious, although gangrene seldom occurs.

The disposition to hæmorrhage sometimes first shows itself during the first weeks of life, but usually during the first or second year, the latest period in these tables being the eleventh year. The earlier the hæmorrhage exhibits itself, the earlier, as a general rule, does death occur. At a later period the inclination to hæmorrhage usually manifests itself as petechiæ and ecchymoses. Accessory diseases do not, as *à priori* it might have been expected they would, pursue a more dangerous cou se in these subjects, excepting when those of the respiratory organs excite epistaxis. The *duration of the attacks* is very different, this being perhaps, on an average, ten or twelve days—spontaneous bleeding usually continuing longer, but being better tolerated than traumatic. The effect of *season* is not determined; but the bleeding seems to occur oftenest in spring and autumn. The blood is thin, and deficient in coagulability. In the majority of instances, the intellectual powers of these patients are of a high order; and in most of them the colour of the eyes is blue, the complexion fair and delicate, and the hair light. Usually the constitution is strong, and the muscular system is often powerful and developed. In certain cases, the radial artery has been observed to be transparent in some spots, owing to the deficiency of the fibrous coat—confirming Rokitansky's view, that the disease consists in a remarkably delicate construction and vulnerability of the vessels, and a watery condition of the blood. The cholerico-sanguineous temperament prevails, and so-called rheumatic pains are very constantly observed. Spots of *ecchymosis*, often absent, may, when present, be either spontaneous or traumatic, the latter being usually much larger than the former. They change in colour as after an ordinary contusion. Sometimes the ecchymoses stand in a critical or antagonistic relation to other affections; thus, *e. g.*, they may disappear on the advent of a paroxysm of gout, and reappear at its termination. In some hæmorrhagic families, they constitute a lower form of the disease in certain of the members. Traumatic ecchymosis may be produced by strong muscular exertion, by falls, or even pressure. It usually disappears unaided, though requiring a longer period than the spontaneous; and if opened, it gives rise to dangerous hæmorrhage.

According to the tables, no difference seems to exist as to condition of life, or residence in town or country. The influence of hereditariness is only imperfectly indicated. The *mortality* from the disease seems to be greatest between 20 and 30, and then diminishes. The earliest age at which it has been known to cease spontaneously has been between 25 and 28. Commonly disease of the liver, hæmorrhoids, gout, or rheumatism, supervenes, and the influence of art is of little use. In palliating the affection, a certain time must always be allowed for the blood to flow, or congestion of internal organs is produced; and in such cases, where this precaution has been neglected, dry cupping of the extremities should be resorted to. Generally, the bleeding stops of itself; but only where exhaustion has occurred. Compression is of little use; and among the styptics sulphuric acid, muriated tincture of iron, and a spirituous solution of sal ammoniac, are the best. Cauteries and caustics usually fail.*

8. *Alcoholismus* is a term applied by Dr. Huss to the effects of prolonged dram drinking. We have placed it under the present section, because the changes induced in the blood are some of the most important of the pathological indications, although there are others equally characteristic which exhibit themselves in various solids of the body. The alterations induced in the blood by habitual dram drinking are thus described:

"The blood of dram-drinkers is impregnated with a foreign substance. Alcohol passes directly from the stomach and intestines into the blood; a part of the spirit is perhaps then decomposed, but another portion is carried directly by the portal system through the liver, and from thence to the lungs, where much is exhaled with the air which is breathed, but the remainder passes into the arterial system, and thence over the whole body.

"As long as the alcohol remains in the blood, a certain degree of poisoning of that fluid takes place, which exhibits itself either by direct intoxication, or in more gradual doses, by certain lesions of the nervous system. But as the poison is of a volatile nature, it is decomposed in its passage through the various tissues, and its components are separated to form new combinations, or are carried off in the excretions. It therefore follows that to produce the symptoms of alcoholismus, a constant supply of the pernicious fluid is necessary."

The changes in the relative proportions of the elements of the blood are, according to Dr. Huss, of a marked character. In all cases there is a much greater abundance of oily or fatty matters than in health; in fact, the blood of drunkards is saturated with carbon; and at the same time the fibrin and globules diminish.

The symptoms of this disease are mainly referable to the nervous system; and consist of tremors of the hands, peculiar sensations of mistiness before the eyes, at first in the morning, but subsequently at all periods of the day. Then the speech becomes indistinct; the sleep broken by horrible dreams; creeping sensations are felt beneath the skin. As the malady advances the tremors increase, and the unsteadiness reaches the lower extremities, until at length the muscles so entirely lose their power, that the patient is compelled to keep the recumbent posture. At this time the sensibility of the skin begins to diminish, first at the fingers and toes, and gradually reaching the arms and thighs. Cerebral symptoms, as vertigo, hallucinations, &c., soon follow, and the patient sinks into a state of low muttering delirium, and dies.

The above symptoms are taken from the narration of a case which the author adduces as a marked example of the disease. In this particular instance,

* Schmidt's Jahrbuch, in Brit. and For. Med.-Chir. Rev., April 1852.

an appropriate treatment, and abstinence from alcohol, caused a rapid and considerable amendment; but a return to his old habits speedily re-induced the same train of symptoms, under which he sank.*

§ IV.—*Accidental Productions.*

9. *Fatty Degenerations.*—We have two communications to mention on this important subject, viz., an essay by Mr. Barlow, and one by Dr. Edward Meryon.

Mr. Barlow alluded to the necessity of taking a comprehensive view of the peculiar degeneration in question, and not confining our attention to its manifestation in one particular organ. This change might, he considered, be produced: 1, by a defective constitution of the blood; 2, by insufficient supply of blood; 3, by deranged nervous influence; 4, by imperfect or declining state of the part affected. The detailed remarks on the above divisions occupied a great length, so that the following outline only has been published at present. The author remarked:

1. The state of the blood in reference to nutrition had been noticed by Harvey in an emphatic manner. It was modified by age, and varied by disease to a remarkable extent. It had been found deficient in corpuscles, in anæmia, (or spanæmia, as Simon terms it,) hæmorrhage, and some cases of granular degeneration of the kidney; but much on this subject was to be inferred from reasoning on certain obvious conditions of the system; nor could it be expected that analysis, however ingenious and subtle, could be expected to cope with half the difficulties of the question. The blood might be said to grow old; the author believed the climacteric disease, as Sir Henry Halford had denominated it, to be a mere sign of degeneration—oftentimes of fatty degeneration, or that chiefly. This kind of decay happening late in life, and gradually loosening its tenure, could hardly be called morbid or abnormal, being altogether as much in the order of nature as the fading of a leaf at the autumnal season. But decay was impatient, and anticipated time: premature degeneration would occur from various general and local pathological states, in many whereof the blood was to a certainty most seriously involved. The observations of Dr. Ormerod and Dr. Quain upon the general relation of wasting maladies to this destructive process, as well as those made by Mr. Gulliver on its occurrence in various parts and states, were referred to at length. The author knew, from his own observations, the vast practical bearings and high interest of this part of the subject. Fatty degeneration was very frequently the most perilous complication, and it was necessary to watch for, and if possible to detect it. Persons sometimes during chronic maladies would turn pale, and expire in a moment; the heart was at fault; degenerated to the utmost, it could act no more. It was to be suspected that the hæmorrhage of disease, as well as artificial losses of blood, had very often assisted in inducing, and quite as often greatly aggravated, this downward change. Cases of fatty degeneration had occurred at six and eight years of age, and Dr. Snow Beck had observed an instance of degeneration of the small cerebral blood-vessels in a child aged one year and seven months; he had detected minute granules in their coats, but did not consider it certain that they were oil-globules, as they had not been tested by dilute hydrochloric acid and ether.

2. The question of inadequate supply of blood was, for the most part,

* Alcoholismus Chronicus et eller Chronisk Alcoholssjukdom, &c. Af. Dr. Huss. Reviewed in Brit. and For. Med.-Chir. Rev., April 1852.

inseparable from that already treated of. Pure anæmia could never last long; abstraction of blood even, if too frequent, led to the spoiling of what remained; yet some practitioners had bled the palest and most bloodless, on the bare imagination of inflammatory action; but not thus could be remedied confirmed anæmia, or atrophy repaired, or degeneration arrested. The changes throughout the arteries and their branches, which led to local obstructions of the circulation, needed fuller inquiry; those obstructions of the heart, as had been well shown by Dr. Quain, acted in the manner of partial ligatures, and led to local anæmia and decay, or they might proceed the length of completely cutting off the supplies of a part. Whether narrowing of an artery would cause local atrophy or death, depended on the condition of the neighbouring vessels, which might be too degenerated themselves to enlarge and compensate for the withdrawn supply. The same remark applied to ligatured arteries in cases of aneurism. Arterial degeneration might be so extensive, and especially if the heart were fatty and feeble, as to prevent the circulation being carried on. The peculiarity of the cardiac circulation, noticed by Mr. Swan, and remarked on by Dr. Quain, as favouring fatty degeneration of the heart, was observed upon. There was no free communication between the branches of the coronary arteries, and the conservative influence of anastomosis was absent. Harvey had dwelt most fully on local modifications of the general circulation. The author thought that some local deaths which had been referred to obstructions of an artery or large branch of it, had really depended on the arrestation of the streamlets in its smaller ramications. All general and local defects of circulation were to be considered perilous in proportion as the general nutrition might be impaired.

3. The question of nervous influence, in relation to the failure of nutrition and fatty degeneration, was extremely complex, but there could be no doubt whatever that its derangement or withdrawal had a large share in the production of atrophy and its results. Rostan, Lallemand, and others, had referred to cases of softening of the brain, which they partly attributed to grief and anxiety. But though nothing was more certain than that the mind so deranged the vital function as to waste the body and "fret it to decay," there was nothing harder than to measure its influence,—to separate it from other simultaneously acting causes of destruction, or to define the exact part which it played among them. The withdrawal of nervous influence by mechanical means, such as those seen in the paraplegia of disease or fracture of the spine, was to be considered by itself; the mind could not reach the affected parts; volition and emotion were withdrawn; and the atrophy which followed was to be explained more readily than that which happened in parts yet open to mental impressions. The state of the mind often injured nutrition, in an indirect manner, by withdrawing the body from those exercises and diversions which constituted the main sources of its vigour; by depressing and interfering with the heart's action, so that the blood was circulated with insufficient frequency and force; by modifying the respiration so extremely that the oxygenation of the blood was less perfect than it should be; by seriously interfering with the digestive function, the disorders of which spread through the body; and, oftentimes, by banishing or breaking the sleep, which had been called so finally, "chief nourisher in life's feast;" but he doubted not that, in many cases, from what might be observed of the effect of the emotions upon different secretions in time of health even, that there was frequently, besides all this, an indirectly depressing influence exercised by the mind, both locally and generally, on the function of nutrition; and he thought it probable that it might at times aid greatly in leading to degeneration, and in aggravating it where it already existed. The author referred to some observations by

Mr. Paget, in reference to matters more or less touching this subject; and also to Dr. Holland's chapter, contained in his 'Notes and Reflections,' on the effect of attention on the bodily organs.

4. The fatty degeneration of parts, as affected by general and local defects of assimilation, is, the author continued, one of the most difficult yet important divisions of the subject. Each tissue might be termed a centre of appropriate and discriminative nutrition. It had a special life of its own, though that were in the circle of, and dependent on, the general vitality. It had, doubtless, hereditary strength or weakness, such as affected the entire organism. It had its own circulation and its own nervous influence, liable to especial impairments; it might be subject to premature death, or be found, when the body as a whole had died, with a structure perfect to the minutest line. The healthier a part was, the likelier was it so to remain; and the converse was certain. The least atrophy was an approach of death, no matter whether it concerned a fibre, or the complex anatomy of all the frame. But mere atrophy was recoverable; and, though parts of an organ had degenerated irrecoverably, the surrounding structure might be restored to vigour, and compensate effectually for the loss sustained. The only part in a degenerated condition which could be watched by the eye, was the cornea; and a case of great interest had been communicated to the author by Mr. Charles Simpson, in which the arcus senilis, which had been both well and frequently observed, had disappeared. He agreed with what Dr. Quain had written respecting the treatment of the degenerated heart, and the hope, in some cases, of arresting the changes in it. Reparation there could not, of course, be seen; but the undestroyed fibres might enlarge and strengthen, and its beats become firmer, and its sounds more audible. In the young, the middle-aged,—nay, in some quite old,—in all, indeed, who had much sound structure left,—fatty degeneration might probably be counteracted by a new vigour infused into the body, and by certain changes in the atrophied tissues which adjoined or bordered on those which had perished. The author adopted Dr. Quain's theory of the process whereby fatty degeneration was effected, and referred to a suggestion made by Dr. Williams respecting its nature. Dr. Quain had found, by accident, changes produced in the hearts of the dead similar to those which often happen in the living under circumstances of low vitality, of a feeble or deficient circulation, of impaired nervous influence, of stricture long damaged by insidious atrophy. It was the power, or rather the combined powers, of life, however vague we may term the expression, which preserved us in integrity, and hindered the changes which implied death. An extract was read from Dr. Quain's memoir touching this point. How long the tissues were preserved healthy in some cases, was not less remarkable than their premature decay in others. The author further stated that Mr. Canton had given a minute description of the state of the heart-fibres of a man aged 103, which was drawn up by Dr. Quain after most careful examination; and it was only in a spot or two, and to an inconsiderable extent, that any of the fibres were found degenerate; but what was most interesting, viewed in connection with this state of the heart, was, that the cornea was free from the arcus senilis, and, microscopically examined, only presented a very few fat-granules scattered here and there. The author referred to some recent observations made upon the subject of fatty degeneration, but especially to those which had been made respecting the fibres of the uterus, and the vessels of the placenta. He also directed attention to a most interesting contribution of Dr. Dittrich, who had found a fatty degeneration of the vessels of the lungs in some cases of pulmonary apoplexy, similar to that already discovered by Mr. Paget (and to which the author had, on a previous occasion, specially called the attention of the Society) in those of the brain.

The author concluded with some general remarks on the importance of the subject.*

—Dr. Meryon's communication refers to the fatty degeneration of the voluntary muscles, and was founded on the case of a youth who, though born healthy, began about the age of four years to lose power in the legs, which gradually increased until the age of eleven, when he could neither stand or walk. Then the power of the arms began to diminish; and eventually both legs and arms were perfectly powerless. When about seventeen he was seized with simple fever, which terminated fatally; and his body was examined twenty-two hours after death. The viscera of the head, chest, and abdomen were perfectly healthy; the sinuses of the dura mater contained a very loose and thin coagulum, but the brain itself, and the spinal cord, as well as the communicating nerves and the nerves of organic life, were perfectly healthy. The relative proportion of grey matter to white, as compared with the nervous centres of another youth of the same age, and when examined under the microscope, the ganglionic cells of the grey substance, the tubular structure of the white, and the white matter within the neurilemma, wherever examined, whether in the cord itself or the outbranching nerves, all bore evidence of a healthy condition. The chief structural lesion existed in the muscular system, which was throughout the whole body atrophied, soft, and almost bloodless; and although the muscular fibres *appeared* to exist, yet were they of an ochry colour, and very flabby. When examined under the microscope, the striped elementary primitive fibrils were found to be completely destroyed, the sarcous element being diffused, and in many places converted into oil-globules, whilst the sarcolemma was broken down and destroyed. Two younger brothers exhibited precisely the same symptoms and the same physical condition at the same age. A fourth boy exists, but he has not yet arrived at the age when the others began to fail. There are six girls in the same family, but none of them have exhibited the slightest tendency to the same form of disease.—The author then related the history of another family at Southampton, in which the two sons were similarly affected, whilst the two daughters entirely escaped. Another family in Sussex he also spoke of, in which there were three sons and one daughter, the sons being similarly affected, but at a later period of life, the daughter remaining in perfect health. In speaking of the cause of the disease, the author attributed it to original weakness and deficient action of the assimilating organs, and an absence of those elements and influences which are necessary for a healthy organisation. Instead of the higher products of animal organisation (albumen and fibrine), those only are produced which are shared in common with plants and minerals. If the cause of the disease were simply a defalcation of nervous energy, he supposes that the fatty deposit would be interstitial, as in paralysis; but it is not so: hence to the deficiency of those plastic elements for the necessary consumption of the peripheral system he refers for the antecedent physical cause. The diagnostic signs of the disease, he thinks, may be—1st. The negative one of absence of symptoms indicating active nervous disturbance, such as pains in the back or head, rigidity of the trunk, tremulous motions of the limbs, &c. 2d. The very slow and almost imperceptible loss of power. 3d. The perfect command of the bladder, which is not the case in paraplegia. His treatment has been guided by the conditions which Mr. Paget has enunciated as necessary to healthy nutrition—viz., 1st. A right state and composition of the blood. 2d. A regular and not far-distant supply of blood. 3d. A

* Reported in Medical Times, &c.

certain influence of the nervous system. And 4th. A natural state of the part to be nourished. These conditions he has endeavoured to fulfil—1st. By supplying to the blood those fibrinous elements in which it appears to be deficient. 2d. By stimulating the capillary vessels in the interstices of the muscular fibres, by exercises of various kinds. 3d. By communicating to the muscles artificial electric currents, which in the healthy state have been shown by Matteucci to be produced by the molecular changes which are continually occurring in the muscles themselves, the interrupted current by the toothed wheel of Masson being attended with more beneficial results than the continued current. By such means his surviving patients have thus far been improved.*

10. *Epithelial Cancer, or Cancroid.*—M. Lebert has entered fully into the pathology of this form of morbid growth in a comprehensive memoir published in the 'Memoires de la Société de Chirurgie de Paris,' of which the following is a condensed resumé:

Epithelial cancer sometimes originates in a small warty tumour, at others in a superficial crack, and is not painful at its commencement. The warty tumour may reach the size of a nut without ulcerating. In the second period, or that of development, a certain amount of inflammatory hyperæmia occurs, which soon induces pain and ulceration. The character of the ulceration varies; on the face it generally excavates, while on the genital organs it creeps onward irregularly, accompanied by hypertrophy of the base, giving rise to warty excrescences. The mean duration of cancroid is about six years and a half; but this varies with the region implicated, the duration being shortest when seated on the lip. Sex has little influence on its development. In sixty-one cases there were thirty-one men and thirty women. The site, however, varies in frequency in the two sexes; in men the lip is most frequently the part assailed, in women less so than other regions of the face. The genital organs are equally liable to it in both sexes.

The causes of cancroid are little known. Phimosis seems to favour its occurrence on the penis; and the use of short pipes has been thought to cause its appearance on the lower lip. Cancroid may be unhesitatingly said to be a curable affection in certain instances; but it is so frequently the reverse that the prognosis must always be exceedingly doubtful.

The treatment of cancroid must be chiefly local. Early operation is the main indication; but it *should be entirely destroyed, or not touched.* On this account the incisions must be made in the healthy tissues, so as to ensure the complete removal of the disease. The knife is the best mode of removing it where incision can be practised; but when this is inadmissible, caustics must be resorted to. Of these, arsenic is the best, as in the paste of Manec. The conjoined use of excision and caustic will in many cases be more successful than that of either separately. When the disease is too extensive for the reasonable hope of cure, palliative treatment can alone be adopted.

Cancroid of the lower lip shows itself sometimes as superficial hypertrophy of the epidermis, at others, and more frequently, as an affection of the papillæ. The effects of local irritation are most conspicuous in the lower lip, where the injurious consequences of the contact of the pipe are seen, as well as those of the ineffectual use of caustics. In operating for cancer of the lip, the portion removed should be large, even, if necessary, to the removal of the entire lip, together with any engorged glands. If the ulcer-

* Reported in Lancet, &c.

ation is recent and superficial, the arsenical paste may be applied, taking care that none gains access to the mouth, so as to be swallowed.

Cancroid of the face is more commonly seen on the nose and eyelids than elsewhere. On the cheek it assumes the papillary form, as also on the eyelids; but here there is generally the addition of fibro-plastic elements.

The excavating ulcer (*ulcere rongeant*) is commonly seen on the nose; it commences as a tubercle, and then ulcerates to an indefinite extent. The progress of this is slow, and numerous facts sufficiently attest its curability. The mean duration appears to be about nine years.

Cancroid of the penis generally originates either on the surface of the glans or internal surface of the prepuce. It is chiefly composed of hypertrophied papillæ, and is specially frequent in persons who are the subjects of congenital phimosis. The orifice of the urethra is concealed by the exuberant vegetations. The duration varies from a few months to ten years.

The "chimney-sweep cancer" of English writers is a form of epithelial cancer; but sometimes it contains true cancer elements. It commences as a wart, which is followed by ulceration. It is curable in its early stages.

Cancroid of the vulva is generally hypertrophic, commencing on the nymphæ, where it may extend to the whole vulva, as well as the anal region. Its progress is slow, and it chiefly affects young women. Its results are fatal, unless it be removed entirely in its early condition. Anti-scrofulous remedies are specially beneficial.

Cancroid of the limbs generally attacks the dorsum of the hand or the ankle. Cancroid sometimes appears on mucous membranes. M. Lebert has seen it on the neck of the uterus, and on the tongue, sometimes in the hypertrophic form, at others as an excavating ulcer. He has also seen it on the arachnoid.

Keloid offers some analogies to cancroid, especially in its tendency to relapse.

PART II.—SPECIAL PATHOLOGY.

§ I.—*Diseases of the Nervous System.*

11. *Apoplexy and Epilepsy.*—Under the denomination of an 'Outline of the Croonian Lectures," Dr. Marshall Hall takes another opportunity of dilating upon the peculiar views of the causation of cerebral symptoms in epilepsy and apoplexy, to which we have referred on former occasions. We do not on this account think it requisite to do more than reproduce that portion of the present communication which refers to the operation of tracheotomy in epilepsy and apoplexy. On this point he observes:

"Every kind of slight vertigo, oblivium, delirium, and morbid sensations, and even *falling*, may occur, without the suspicion of epilepsy; or, if there be epilepsy, they may occur with various spasmodic affections, as the 'petit mal.' They therefore may occur in spite of tracheotomy.

"But the deep purple countenance, the bitten tongue, the foam, the severe and general convulsion, the deep coma, the subsequent mania, the danger to life, mind, or limb, can only occur as effects of laryngismus, and are prevented by tracheotomy.

"By means of this measure, we therefore arrest the course of this terrific

and dire disease, at the point at which it becomes a source of havoc and of danger.

"But it must be remembered that *more* than this, this measure cannot effect.

"The epilepsy may be inveterate or hereditary; there may be defective development of the nervous centres; there may be *frequent* slight attacks, and only *occasional* severe attacks; havoc may already have been inflicted on the intellect, or on the sentient or motor powers; organic disease may have been a cause, or a consequence: the intelligent physician will readily comprehend what may and what may not be expected in such cases.

"But in cases induced by emotion, or by one or more of the irritations; not yet inveterate; not yet involving diseased structure; and consisting chiefly of convulsive attacks, inducing lividity of the countenance, involving the bitten tongue, and the foam, and succeeded by stupor or delirium;—as the case depends on laryngismus, so it may be superseded by tracheotomy and the tracheal tube.

"There *is* one case in which the propriety of the institution of tracheotomy can admit of no doubt. It is such a case as that of Mr. Cane, (vide Abstract, vol. XIV, p. 6,) when life is at stake. The additional motive afforded by the hope that the measure may lead to the subsequent prevention of epileptic convulsion is also illustrated by that case.

"But, hereafter, perhaps the hope of saving mind or limb, when life itself is not in jeopardy, may be deemed a sufficient motive for tracheotomy. I think I may safely leave the question to those who have the opportunity of witnessing the various forms of convulsion—epileptic, puerperal, &c.—with its dire effects, to determine. It will come to be a question of *degree* and of *time*—it will come to be agitated when we behold our patient affected with coma and stertor, or with convulsion, and know that tracheotomy will remove the former, and prevent the recurrence of the latter, with their effects. Apoplexy and epilepsy occur in every form, in every degree, both in themselves and in their effects. They occur and recur in rapid succession, and so as to threaten life, or impair the faculties; they occur in a form and degree scarcely perceptible, and in the direst form; and they occur in every intermediate form and degree. What severity of malady will call for and justify the remedy?

"As I have stated, I believe few will hesitate to perform the operation of tracheotomy, as the present remedy, when there is, from apoplectic laryngismus, imminent danger to life. But the question recurs—Are we justified in performing this operation in cases of epileptic and other convulsion, as a *preventive* of future evil? Are the somewhat remoter dangers to mind, and limb, and life, and the hope that, whilst the faculties are spared, the patient may be rescued from the susceptibility to the attacks, the *dignus vindice nodus*, any sufficient motive for adopting this measure in its more continuous mode of a tube worn in the trachea? After having witnessed the dire circumstances and effects of these frightful maladies more than any one—of epilepsy of inorganic origin especially—I unhesitatingly say—Yes. I regard the melancholy condition of the patient as justifying the heroic remedy.

"The case, I repeat, may be violent and frightful *in any degree*. In what precise case, is trachcotomy justifiable? This is a matter of pure *moral* calculation and choice, in regard to the terrors of the malady on one hand, and of the remedy on the other. Epilepsy may occur in the slightest form of mere transient oblivium, and it may occur in the gravest form of sudden and violent convulsion, dashing the patient to the ground, into the fire, or into

the water, and be followed by coma or apoplexy, delirium or mania, paralysis, amentia.

"The former of these attacks, or the *epilepsia mitior*, comprises all that is short of laryngismus—affections of the senses, as muscæ, tinnitus, the odour of musk, aura; vertigo, oblivium, confusion; loss of consciousness, nutatio, falling; various spasmodic affections of the face, the eyes, the neck, the extremities.

"Then comes laryngismus, laryngeal dyspnœa, perhaps perfect closure of the larynx, with violent efforts of expiration. This, with all the other links of the dreadful chain, constitute the *epilepsia gravior*.

"All that is on *this* side of the laryngismus must be unaffected by the operation of tracheotomy; all that is on *that* side of this laryngismus will, I trust and believe, be prevented by its efficient institution. By tracheotomy, the *epilepsia gravior*, or the '*grand mal*,' is converted into the *epilepsia mitior*, or the '*petit mal*.' If this, my hope, be realised, I shall deem the event a great victory achieved by physiology or theory over mere observation, and especially by the discovery of *the Diastaltic Nervous System*, of which it is an application."

[Dr. Hall proceeds to make a few remarks on the best mode of performing the operation of tracheotomy. He says:]

"I first propose to make a free incision through the integuments; then to separate the other tissues by means of a blunt-pointed stilet, or the forceps, mechanically, without division, and of course without hæmorrhagy, and thus to denude the trachea. I have, then, to suggest the use of an instrument in the form of a trochar, or small trephine, supplied with a curved hook, which may be drawn upwards within it, and a circular cutting edge. As this last is made to revolve, the hook is drawn within it, and a circular piece of the trachea is removed.

"Into the orifice thus made into the trachea, I propose to introduce a little instrument made of silver wire, much lighter than any tube, and admitting of being diminished in size for introduction and removal, and reintroduction, and so contrived as to be secure in the tracheal orifice, when introduced and allowed to expand.

"I further propose that a cage of wire gauze, covered by cotton net, be fixed over the orifice, to prevent the ingress of cold dry air, especially when the easterly wind prevails.

"It has occurred to me, too, that, in cases in which a protracted tracheal opening is required, the edges may be *healed* by means of the application of sulphate of copper, the edges of the integument being removed by the lancet or the scalpel, and brought together, when it is thought well to obliterate the orifice.

"I repeat, in conclusion, what I have on several occasions stated, that, if tracheotomy were performed, and a tube worn in the trachea, the epileptic, the puerperal, or even the infantile *convulsion* would be prevented, with its dire effects.

"Experience is now added to theory, to confirm me in this *hope*—for it is but a just degree of caution *still* to regard the question as one of hope.

"I now generalise the idea, and apply the reasoning to paroxysmal apoplexy, as well as to convulsion; and I hope and trust that tracheotomy will be found a preventive or a remedy of the apoplexia gravior, as well as of the epilepsia gravior.

"It is singular to observe how laryngismus becomes, in both apoplexy and epilepsy, the intermediate link between the milder and severer disease—the

effect of the former, and the cause of the latter. The due appreciation of these facts will lead to an important principle of *treatment* in one of those affections, and of *prevention* in the other. The latter of these must be viewed in the light of a remarkable prediction fulfilled by the event.

"The conclusions to which I have arrived, are—

"That, in cases of the apoplexior gravior without organic disease, the patient ought not to be permitted to die, without the institution of tracheotomy.

"That, in cases of epilepsia gravior, laryngismus with convulsion, and danger to life, mind, or limb, ought not to be permitted to recur, without giving the patient the hope involved in the same operation.

"By tracheotomy, I repeat, the '*haut mal*' is converted into the '*petit mal*,' beyond which, the dire affection, for want of obstruction to the breathing, with expiratory efforts, cannot proceed; and even this '*petit mal*' may, for want of renewed havoc made on the nervous structures, with induced susceptibility to returns, subside and disappear.

"It has been proposed as a question whether laryngotomy or tracheotomy be the preferable operation as a preventive of convulsion. My choice of the latter is founded on the following considerations:

"First, the textures involved in laryngotomy are more complicated than those involved in tracheotomy. In the latter case, the incision being made through the integuments and the other tissues, the *veins* included, being *pushed aside*, nothing remains but the simple cartilaginous rings and mucous membrane of the trachea requiring division.

"Secondly, the movements of the trachea are far less, and less complicated, than those of the larynx, in various acts, as of deglutition, &c.

"Thirdly, if inflammatory action spread from the orifice, it may, in the case of laryngotomy, implicate the important tissues of the larynx.

"The orifice in tracheotomy is also made at a more convenient spot, in regard to dress, than in laryngotomy.

"It must be remembered that, in the case in question, many months, and even years, may elapse during which the tube is worn without intermission."

12. *Paraplegia,—Ergot of Rye in.*—An instance in which the remedial powers of ergot in paralysis were shown in a remarkable manner, has been recorded by Dr. R. D. White.

The patient was a farmer, aged 50, who had been exposed to cold while watching cattle. After this he complained of pain and pricking in the extremities, with a sense of weakness in the loins and hips. He got worse from day to day, until he lost entirely the power of progression, or assuming the erect posture; but when sitting down, he could move his legs about on the floor. There was no loss of sensation in any of the parts; his bowels were very obstinate, and never moved without active purgatives; appetite bad; he spent restless nights; little sleep, and that disturbed by troubled dreams; profuse perspirations, and his wife said he occasionally talked sillily.

This case was first treated by blisters along the course of the spinal column, particularly the lower portion, and mercurial action was induced by means of pil. hydrarg., in combination with sulph. quinæ and ext. tarax. This object being accomplished, the pil. hydrarg. was diminished in quantity, and the effect kept up in a moderate degree for another week; occasional purgatives of an active kind were given.

A decided improvement was the result. To follow up the good effect a seton was established over the sacrum, and the tonic treatment was continued, aided by frequent frictions over the affected limbs, with stimulant applications, and the daily use of the flesh-brush.

By the early part of January, the patient could rise off his seat, and walk several steps, but not without the help of two sticks, and then with a very tottering gait. Appetite and sleep not improved.

Here the improvement ceased. The author then had recourse to the exhibition of strychnine in pills, thrice daily, and quinine in solution, twice daily. Another slight improvement was the result, so that the treatment was persevered in for about a month, towards the close of which his symptoms again disimproved; his strength began to fail; his appetite (which improved under the quinine, and was met with nutricious diet) gave way; his bowels became so torpid that the most active purgatives were necessary daily, for he complained of great distension, and consequent distress, if the bowels were not acted upon; night sweats became profuse, and weakening, and there was again loss of power. Fearing the discharge from the seton might be too profuse, it was allowed to heal slowly: and observing a muddiness about his intellect, a blister was applied to the nape, which had a good effect. He, however, now kept his bed continually, and became very desponding; regarding his case as hopeless.

Just at this period, the author saw an account of some cases of paralysis treated by M. Gérard of Marseilles, with ergot of rye successfully, and lost no time in exhibiting to the patient the doses recommended—ʒss ter. in die—made into an electuary with treacle, stopping all other medicines, and hopefully waited the result.

When two ounces had been taken (the quantity first supplied), the patient's wife came to report progress, and said there was no improvement, *except that the bowels had acted naturally for the last few days.* This was regarded as an earnest of improvement, and steady perseverance in the remedies was advised. After some further treatment, his improvement became rapid, so that within a month from the commencement of the ergot, his recovery was complete.*

13. *Hydrophobia.*—Several cases have recently been recorded; it need hardly be said that they were fatal. In two chloroform was inhaled with advantage, as regards the sufferings of the unfortunate patients, but with no ultimate benefit. Reference to these cases are given in the margin.†

14. *Neuralgia.*—An important contribution to the pathology of neuralgic affections, has been furnished by Dr. Downing,‡ in a work to which the Royal College of Surgeons has awarded the Jacksonian prize for the year 1850. This we shall briefly analyse.

The author defines neuralgia to be a painful disorder of nerves, unconnected with inflammatory action or other recognisable lesion. The character of the pain is vaguely described, but for the most part consists of intermittent paroxysms, of plunging, stabbing or tearing pains, taking the track of a well known nerve. Dr. Downing divides neuralgia in general into three varieties, the *Spasmodic, Rheumatic, and Hysterical.* The justice of the division is, we think, fully borne out by experience. The spasmodic form is thus described.

"The attack is sudden, instantaneous, and usually without warning. A person in good health, is seized in a moment with violent pain in some part of the body. He cannot account for it. The suffering is perhaps moderate at first, and ceases

* Dublin Medical Press, April, 1852.

† Dublin Quarterly Journal, Feb. 1852. Provincial Medical and Surgical Journal, March 31, 1852. Transactions of the Medical and the Physical Society of Bombay, No. x.

‡ Neuralgia; its various Forms, Pathology, and Treatment; being the Jacksonian Prize Essay for the year 1850, with some additions. By C. Toogood Downing, M.D. London, Churchill, 1851.

in a few minutes. It then recurs after a brief space, again without warning or apparent cause, and increases in severity and duration. Ultimately the disease is fully established; the suffering occurs at intervals, and often amounts to paroxysms of excruciating agony. Then it is that some premonitory symptoms may be noticed before the attack, and an exciting cause may often be evident. But the patient alone is sensible of the approaching fit. Nothing can be detected by the medical attendant to indicate it, either on the part or in general demeanour, except perhaps a little more watchfulness in the countenance. The patient is on the alert—is roused by some undefinable sensation. Sometimes he describes a strange feeling of heat or cold, or a breath like the aura epileptica."

From careful inquiry, the author finds the usual process to be this:—The previous fit having passed off, the nerve has an interval of rest, he soon, however, has warning of a return of his torture. There may be only a few painless shocks, but soon pain is superadded, which gradually becomes more and more intense. The character of the pain varies, and in some it resembles electric shocks, repeated momentarily, and followed by an agonising vibration, as if of the nerve itself. The paroxysms are intermittent, and sometimes periodic. This the author considers a favorable feature in the history of the case. Much diversity exists, both as to the direction of the pain and the extent of nerve implicated. The author has noticed, that in general, the pain darts from within outwards; but the reverse is occasionally witnessed. Great difference is also seen in respect of the sensibility of the part affected. In some cases the slightest touch, even the contact of the dress, will re-produce the pain; in others, relief is obtained from pressure.

The next form, *rheumatic* neuralgia, the author looks upon as the same disorder, modified by the rheumatic diathesis. The symptoms are, heat and tenderness along the course of the nerve. The pain is dull and aching, with exacerbations, but wants the plunging agony of the spasmodic form. There is a great tendency to periodicity in this variety. The diagnosis, according to the author, is made out, by the history, character of the pain, and the coincidence of rheumatism of other parts. There is also an absence of the muscular twitchings which frequently attend the spasmodic form.

Hysterical neuralgia is one of the many manifestations of that protean malady, and affects, *par excellence*, certain localities, as the head, left intercostal nerves, iliac regions, and the joints, and also certain organs, as the breast, uterus, and in the male the testis.

The causes of neuralgia, which the author next considers, are predisposing and exciting. Among the former are age, sex, and, more powerful than all, an hereditary neuralgic diathesis. Of the latter we are fully convinced, and have seen reason to believe that it is intimately allied to gout. Among the exciting causes, the author looks upon deranged conditions of the alimentary canal as some of the most powerful. Changes of temperature, mechanical irritants, as by bony spiculæ, caries of the teeth; malaria; disease of the nervous system, are also not unfrequent causes, and are all carefully considered by the author.

The next subject of inquiry is that of the nature of neuralgia. This the author admits is involved in obscurity, while he investigates with due attention the various hypotheses indulged in by writers on neuralgic affections. That this inquiry, however, is not attended with any beneficial results, the author's own remarks demonstrate.

The local condition of the nerve during a paroxysm of neuralgia is a question of the utmost interest. Dr. Downing is inclined to the belief that the sensitive fibres are themselves thrown into a state of spasm, through the

agency of the neurilemma, a structureless membrane identical with the sarcolemma of unstriped muscular fibre. This idea is not confined to the author, however, as Sauvages had long since adverted to it; and the same opinion is entertained by Mr. Joseph Swan.

We shall not follow our author through the next section of his work, which is occupied with the diagnosis and the alliances of neuralgia with other morbid states, but shall proceed at once to the chapter on treatment, because in this we find the most original portion of his observations.

The principles of treatment in neuralgia are divisible into three indications:—1st, to remove the predisposing and exciting causes; 2d, to avoid all possible sources of irritation; 3d, to allay the morbid irritability of the nerve itself. In fulfilling the first indication, the author gives judicious instruction on the method of conducting an examination with reference to the causes, constitutional and local, the removal of which is the *desideratum;* but the third is that on which most is to be said. The medicinal agents are general and local; the former are very numerous, and include drugs of the most opposite actions. Carbonate of iron, quinine, arsenic, zinc, strychnine, among the tonics; croton oil and other purgatives, opium and its preparations, belladonna, aconite, and Indian hemp, among sedatives, form the staple of internal treatment. The local measures, are blisters and other forms of counter-irritants, (which are almost universally employed by Valleix,) veratrine ointment, and the endermic use of morphine and other sedatives, galvanism, intense cold, and lastly, a method peculiar to the author, which we shall presently mention.

In reflecting upon the action of these several remedies, both general and local, the author observes that they may be resolved into two categories, the stimulant or tonic, and the sedative. Why the same result should follow measures so opposite, he endeavours to show by a reference to the physiology of the nervous system; "both," he says, "produce the like result,—namely, temporary loss of the polar or electric property, but in an opposite manner. The one directly paralyses the action, the other destroys it by over-stimulation."

The new method of treatment to which we allude, as the most original portion of this work, is that of the local application of sedative vapour by means of an apparatus specially adapted to the purpose, and which in the author's hands has been productive of very beneficial results. We do not know that it has been tested by others. The apparatus consists essentially of a reservoir or chamber, in which the material used can be ignited; bellows, for the purpose of generating a current of air through the ignited material; and tubes, with terminations of various kinds, for conducting the air or vapour to the part required. The materials used are chiefly the slender stalks, leaves, and seeds, of sedative plants, such as henbane, hemlock, belladonna, aconite, Indian hemp, &c.

The general doctrines of neuralgia, together with the general principles of treatment, being thus disposed of, the author next addresses himself to the consideration of the local manifestations of the malady, as it shows itself in neuralgia of the several branches of the fifth pair, of the seventh pair, the cervico-occipital, intercostal, lumbo-abdominal, and brachial nerves. Sciatica and crural neuralgia are next in succession, after which we have a description of neuralgia, as it affects the mammæ, the testes, the joints, and internal viscera. A very important variety of the disease, *traumatic* neuralgia, occupies the closing chapter of the book. From all these different subjects we might select passages of great practical value, did our space permit; but we are constrained to content ourselves with a notice of the latter form of the

disease, which is the more deserving of attention that it has not hitherto been minutely described.

Traumatic neuralgia is the term applied to neuralgia arising from local injury, or, as is not uncommonly the case, from surgical operations. The causes which give rise to this form of neuralgia are stated to be—1st, a foreign body in the substance of the nerve; 2d, partial or entire division of a nerve; and 3d, pressure on a nerve. The author quotes a remarkable case of the first division, which occurred in the practice of Mr. Wardrop; but the most interesting cases are those which occasionally follow amputation, and which are as severe as they are unmanageable. In these cases it is somewhat uncertain whether the pain is to be referred to division, irritation by spiculæ, or to pressure. The author thinks that the pain may be due to either cause; it may arise "from a *fixed half-cut* nervous fibril, which is excited to action by the motion of the limb; from a nervous trunk or fibril *compressed* by the contracting cicatrix, or against the shaft of the bone; or by the hardening of the lymph in the bulbous extremity; and lastly, through *spiculæ of bone* running into, or osseous deposit taking place in, a nervous branch."

In the treatment of traumatic neuralgia no fixed rule can be laid down. Internal remedies are useless; division of the nerve above the presumed seat of irritation has succeeded in some cases, failed in others. The author very properly remarks, that to be successful the division should be practised early, before the nervous system is irretrievably impressed. In neuralgia of stumps, it has been recommended to reopen the cicatrix, remove the bulbous end of the nerve, or to amputate above. The probability of either of these measures being successful will, the author observes, depend on the local nature of the exciting cause, and the localisation of the neuralgic pain. His own suggestion is, to rectify, if possible, the general neuralgic diathesis, and to apply local sedatives by his apparatus. In one case narrated, this plan was eminently successful.

§ II.—*Diseases of the Respiratory System.*

15. *Physical Diagnosis of Pulmonary Disease.*—Subsequently to the publication of our last Report, another treatise has been added to the literature of physical diagnosis of the lungs, by Dr. Herbert Davies,* a gentleman well known as an accomplished auscultator. The work, which we have no hesitation in recommending as one of the best expositions of the subject extant, consists of a series of lectures delivered by the author at the Royal Infirmary for Diseases of the Chest. The first of these gives a concise view of the statistics of pulmonary diseases, with the anatomy and physiology of the respiratory organs. The second enters at once into the extensive subject of physical diagnosis, including spirometery, percussion, inspection, palpation, and auscultation, all of which are carefully considered in this and the two succeeding lectures. In the fourth and following lectures, to the eighth, the author describes at greater length the most important of the sounds which we are accustomed to consider as diagnostic of particular lesions, among which we may particularise bronchophony, ægophony, bronchial respiration, the râle crepitant, &c.

On all these points the author's observations will be found of great interest, but especially on those upon which the opinions of auscultators are as yet

* Lectures on the Physical Diagnosis of the Diseases of the Lungs and Heart. By Herbert Davies, M.D. F.R.C.P.S., &c. London, Churchill, 1851.

undecided, such as the physical causes of bronchophony and ægophony, and the part of the lung in which the crepitus is produced. The reader's attention cannot be too strongly directed to these admirable lectures.

16. *Larynx, Polypus of.*—This history of polypus of the larynx has been written by Dr. Ehrmann in a work recently published at Strasbourg.*

The symptoms of this lesion appear to be the sense of a foreign body in the larynx, producing cough, dysphonia, dyspnœa, and ultimate suffocation. Nothing in general is to be learned from the expectoration. The form of the polypi is variable; sometimes they are rounded, at others, irregular in shape, granulated, lobulated, and pediculated. They may occupy the whole internal surface of the larynx, but their seat of election is about the glottis, more particularly its inferior ligaments. Their composition is either fibrous or fibro-cellular, with or without the union of the elements of mucous membrane.

The treatment, as detailed by the author, is anything but satisfactory. Internal medicine has no influence over the growths, and the only resource is their removal through an opening in the trachea. Five cases are reported in which the operation was performed upon the human subject. In one only, performed by the author himself, was it successful.

17. *Pneumonia.*—Dr. Todd has recently expressed his dissatisfaction with the routine treatment of pneumonia by depletion and tartar emetic, and has detailed his experience of a method of treatment consisting in exciting the secreting functions of the kidneys and skin, at the same time keeping up a free external stimulation, and supporting the strength by well-regulated supplies of nourishment. Two cases are related which were brought to a successful issue in this way, by giving six drachms of the liq. Ammoniæ Citratis every three or four hours, with an occasional aperient, and the external use of the Linimentum Terebinthinæ.†

18. *Scrofulous Inflammation of the Lung.*—The views respecting the pathology of phthisis, which were illustrated in our last volume in a paper by Dr. Speer, have met with a supporter in an American practitioner, Dr. Pepper, who insists on the distinction in reference to prognosis more especially, between scrofulous inflammation and tuberculisation of the lungs. His paper, which is to be found in the 'American Journal of Medical Sciences,'‡ will well repay perusal, offering a clue to many of those supposed cases of arrested phthisis, in which the physical signs of tubercular deposit have disappeared under the combined advantages of a well-devised treatment and favorable circumstances.

19. *Pleuritic Effusion—Paracentesis.*—The same journal likewise contains a paper by Dr. Bowditch on the advantages of paracentesis thoracis in pleuritic effusions.§ After alluding to former writings on the subject, by Drs. Roe, Hughes, &c., many of which we have noticed in our earlier volumes, he records his own experience, which he subsequently reviews, for the purpose of bringing out the most interesting points in the history and treatment of the disease.

Thus, speaking of the immediate results of the operation, he informs us that in twenty-seven instances there was never any particular pain or incon-

* Musée d'Anatomie de la Faculté de Médecine de Strasbourg. Historie des Polypes du Larynx. Par C. H. Ehrmann, M.D., &c., pp. 58; Strasbourg, 1850.

† Medical Times, and Gazette, May 15, 1851.

‡ April 1852.

§ Which may be advantageously compared with the article by Dr. Pepper, in a former part of this volume, (see p. 16.)

venience observed. In all there was immediate relief to the oppressive dyspnœa, with capability of greater exertion than prior to the operation. The pulse usually was unaffected, the cough was observed to be augmented for a few days. The digestive functions were generally improved.

The author inquires under what circumstances the operation should be performed. To this question he replies, that it should be performed in all cases, whether acute or chronic, in which the dyspnœa is sufficient to threaten death; also in all acute attacks in which absorption cannot be produced by medicine. He also advises it in all effusions where one side of the chest is distended with fluid, even if there be no great dyspnœa.

The author next recapitulates the objections urged against the operation, and disposes of them satisfactorily. The situation preferred by him for the puncture is just under the lower angle of the scapula, between the seventh and eighth ribs.

§ III.—*Diseases of the Circulatory System.*

20. A work on the diseases of the heart,* by Dr. Wardrop, has recently issued from the press, which a careful perusal enables us to introduce to our readers as one well worthy their best attention. The scope of the work is such, that it will be quite impossible to do more, in the brief space allotted to these reports, than give a passing analysis of its contents, which embrace the whole subject of organic and functional disease of the organ. The chief peculiarity of Dr. Wardrop's book consists in some original views on the physiology of the circulation, and its relation to other functions. One opinion which he advocates is, that muscular action not only accelerates the flow of blood in the veins, but also by exercising compression on the arteries, impedes the transit of arterial blood, and thus causes a remora of that fluid in the ventricle. This he calls the *musculo-cardiac* function; a function by which he is enabled to account for many phenomena otherwise inexplicable, such as the immediate recovery of intelligence on awaking from sleep, restoration from syncope, the difference of frequency of the pulse in different postures, &c.

Another function mentioned by the author is the *pulmo-cardiac* function, which supposes the lungs to act as a reservoir of the blood, by and of which the heart is preserved from the effects of sudden and irregular supply. A third function is the *veno*-pulmonary, the office of which is the same.

The diseases of the heart occupy from the fifth to the thirty-second chapter, and are arranged in a method at once philosophical and practically useful. We have at first the symptoms of heart disease in general, then those derived from the several great systems, as the cerebro-spinal, respiratory, vascular, digestive, and uterine. The diagnosis and prognosis of heart disease in general, occupy two chapters, after which the general treatment of heart disease is considered.

Among the particular diseases of the heart, the author enumerates congestion, functional disease from changes in the quantity and quality of the blood, and from disorders of the nervous system. The organic diseases include simple gouty and rheumatic inflammation, and changes in the different

* The Nature and Treatment of the Diseases of the Heart, containing an Account of the Musculo-Cardiac, Pulmo-Cardiac, and Veno-Cardiac Functions. By James Wardrop, M.D. London, Churchill, 1851, pp. 584.

tissues of the organ, &c. The concluding chapter embraces the accidents and malformations to which it is subject.

— The second portion of the work by Dr. Davies, previously mentioned, is occupied with the physical diagnosis of diseases of the heart. The author here, as in the case of pulmonary auscultation, commences with a brief anatomical description of the organs concerned, and of their physiological actions. The measurements of the different orifices first obtain attention, in which we observe that the author has contented himself with the scanty information afforded by some half dozen experiments of Bizot. The disputed question of the cause of the heart's impulse is then considered at some length, and the opinions of Cruveilhier and Skoda contrasted. The author does not attempt to reconcile the difference between these physiologists, but evidently leans to the opinion of the latter, viz. that it depends upon the recoil of the ventricles, which takes place when the blood is driven through the aortic and pulmonary orifices.

The means of appreciating the signs of cardiac as of pulmonary disease are derived from inspection, palpation, percussion, and auscultation; each of which subjects is amply discussed in the eleventh and following lectures.

The principal abnormal circumstances to be recognized by perspection are described to be—1. A double stroke in the præcordial region. 2. A double stroke præcordial and sternal. 3. A displacement of the apex. 4. An unusual prominence in the præcordial region. 5. A movement of undulation.

The information to be derived from palpation, is mainly referable to the extent and force of the impulse. This, Dr. Davies tells us, is increased: 1. In health under excitement. 2. In simple hypertrophy. 3. In præcordial adhesion. On the other hand, it is said to be diminished in—1. The second stage of pericarditis with effusion. 2. In atrophy, with or without dilatation. 3. In passive dilatation. 4. In some blood diseases, as chlorosis, scorbutus. 5. In fatty degeneration. 6. In emphysema, where a portion of lung overlaps the heart. 7. In fat and muscular subjects.

In the chapters on auscultation of the heart's sounds, we find that the author enters minutely into the *quæstio vexata* of their causation. On this point also he is disposed in the main to accord with Skoda, whose theory he thus expresses.

1. "That the right and left ventricles, the aorta and pulmonary artery, combine in the formation of these sounds. 2. That of the systolic sound, one portion is due to the ventricles, and the remainder to the origin of the great vessels. 3. That in a normal condition of the heart, the synchroneity of the causes which produce sound in the heart and great vessels, causes the two portions to be blended together into one sound. 4. That in disease, a separation of the two portions respectively due to the right and left side of the heart becomes evident to the ear. Thus in organic disease of the aortic valves, their first and second sounds are replaced by a double murmur; but normal systolic and diastolic sounds may be heard over the valves of the pulmonary artery. 5. That the ventricular first sound is due to the stroke of the apex of the heart against the chest wall, the sudden tension of the auricular ventricular valves, and the impulse of the blood upon them. 6. That the arterial first sound results from the suddenly increased tension of the coats of the aortic and pulmonary arteries. 7. That the ventricular second sound is either the second sound propagated from the semi-lunar valves, or the result of the shock of the blood against the ventricular walls, and the sudden disengagement of the apex of the heart from the opposed pericardium. 8. The arterial second sound proceeds from the vibrations of the aortic and pulmonary valves."

The subject of the two latter chapters in Dr. Davies's work is that of the "murmurs," in the description of which he follows the ordinary division into exocardial and endocardial, and of these again into direct and regurgitant aortic, pulmonary, mitral, and tricuspid. The circumstances under which each variety may be expected to occur are lucidly pourtrayed, and their comprehension by the beginner much facilitated by well-devised diagrams. On the subject of the venous murmur, the author has some valuable and original observations, which we shall proceed to notice.

The nature of the continuous murmur in the neck has been much disputed, and has been located by different writers both in the carotid artery and in the jugular veins. The latter opinion, first promulgated, we believe, by Dr. Ogier Ward, is the one professed by the author. This murmur has usually been thought to be confined to cases of spanæmia, and to be more commonly found in chlorotic females than any other persons. This opinion, though practically useful, is shown by the author not to be strictly true, as he has found it not only in a large proportion of children of both sexes, but also in healthy adults. The facts which he has collected are thought by the author to warrant the following conclusions:

1. That the venous murmur does not necessarily depend upon any abnormal condition of the blood, nor upon any deviation from health, for we have found it to be almost universal in children, to be present in a large proportion of persons of both sexes under the age of 25, in perfect health. It is not, therefore, an anæmic or chlorotic murmur alone, although uniformly present in such cases.

2. That the venous murmur is not entirely the result of pressure, although partly to be attributed to that cause. The existence of an analogous sound beneath the sternum, where pressure cannot operate, proves this.

The cause of the production of the sound is accounted for by the author by the combined effects of—1. A certain velocity of circulation. 2. An elastic condition of the parietes of the vein. 3. A good conducting medium between the vein and the surface.

—In reference to the cause of the impulse of the heart, which, as we have above stated, is still a source of wide discrepancy of opinion, we call attention to a communication by Mr. Cartwright (Art. 11) in the present volume, which supports the opinion of Corrigan and Stokes, that it takes place during the diastole of the heart, and not during the systole, as is generally maintained.

21. *Rupture of the Heart.*—Two instances of rupture of the heart, occurring in an unusual site, have recently been recorded. One of them is an instance of rupture of the septum, which occurred in the York Hospital under the care of Dr. Simpson. The patient was a groom, of intemperate habits, admitted for the dyspnœa and palpitation supervening upon an attack of rheumatism. On admission there was no remains of any local affection of the joints, and, except that his urine was scanty and loaded with lithates, there was nothing indicative of a recent rheumatic attack. He had dyspnœa, but not so urgent as to prevent him from lying low in bed. A double murmur, intensely loud, was heard over the whole anterior part of the chest; it had the character of an exocardial murmur, more exaggerated and more diffused than usual. The heart's impulse was somewhat increased, and the limits of the dull præcordial area were more extended than in health. The pulse was frequent, large, and very jerking; the tongue coated; he had slight cough, with scanty expectoration of frothy mucus, and a few large moist râles were heard scattered over the posterior aspect of the chest.

After a few days he began to improve. On the morning of the ninth day from the date of his admission the cough and pain at the præcordia had nearly left him, and the general disturbance of the system had very much diminished; but the physical signs remained unchanged, and the pulse, though it dropped in frequency, lost none of its eminently jerking character. At noon, on the same day, while rising up in bed to take some food, he suddenly fell backwards and died in a few minutes.

The body was examined thirty-six hours after death. The lungs were congested to a considerable degree. The cavity of the pericardium contained about ʒiij of blood-tinged serum. The opposed surfaces of this membrane were everywhere coated over with a thick, rough layer of quite recent lymph, but no adhesions had formed between them. The heart was large, and all its cavities distended with soft black coagula. The walls of the left ventricle were thicker than normal. The two posterior flaps of the aortic valves were each of them perforated at their base by a large opening, the margins of which were ragged and thickened, but the free edges of the valve were natural. On the left side of the septum, immediately below the aortic valves, there existed an opening which led into an irregular cavity or sac formed in the muscular tissue of the heart, sufficiently large to contain a small walnut. The entrance into this sac was slightly constricted, and about the size of a shilling; at its margins the endocardium was ragged and slightly thickened. The sac contained a coagulum, which was only feebly if at all adherent to the muscular fibres and lining membrane of the heart, which formed the walls of the cavity; it did not present externally, but the tip of the finger, when introduced into the bottom of the sac, was situated immediately to the right of the root of the pulmonary artery, and under cover of the right auricular appendix; no adhesions, however, existed between the under surface of the appendix and the aneurismal portion of the pericardium. The muscular tissue of the heart in the vicinity of the cavity was softer, and of a darker and duller colour than the rest of the organ. At the posterior part of the sac there was a small laceration into the cavity of the right auricle, situated, when viewed from the latter, about a quarter of an inch above the left margin of the auriculo ventricular opening. This laceration was sufficiently large to admit the end of a small quill to pass without difficulty. Attached to the lining membrane of the right auricle at the part where the perforation had taken place, there were three or four small white wart-like bodies, one of which, larger than the rest, hung pendulous by a slender neck, into the auriculo-ventricular opening. The latter was about half an inch in length and a quarter of an inch in width, somewhat flattened, and resembled very much the small polypoid growths met with in the cervix uteri when the Meibomian glands are abnormally enlarged. These vegetations were firmly attached, fully organised, and evidently the growth of time. The endocardium, at their base, was thickened and more opaque than elsewhere. The mitral, the tricuspid, and the pulmonary valves were perfectly healthy; and neither the endocardium nor the lining membrane of the aorta presented any atheromatous or other morbid deposit. The other organs were healthy.*

— A second instance of the same mode of death, but without the prior formation of an aneurysmal sac, has been reported at a recent meeting of the Norwich Pathological Society by Mr. Cubitt.

— A case of rupture of the left auricle has occurred to Dr. Battersby,

* Medical Times, and Gazette, April 10, 1852.

of Dublin. The subject was a man-servant, aged 58, who complained of uneasiness in the præcordial region, for which he was under treatment, when he was suddenly seized with urgent dyspnœa and tendency to syncope; his life was prolonged for three days, when he died comatose. On examination after death the pericardium was seen enormously and tightly distended, and was filled by nearly a quart of clotted blood. At first there was some difficulty in discovering whence it had come, until, having turned up the apex of the heart, the back part of the left auricle was found blackened from extravasation; and, on searching more accurately, a small ragged opening, capable of admitting a goose-quill, was discovered just below the auricular appendix, leading into the cavity of the left auricle. In its interior was seen a large rent of its muscular, fibres, some of which, however, remained intact, descending from the opening obliquely and to the right side. The entire length of the rent was close on three inches. No lymph, or any appearance of inflammation, was traceable, either on the inside or outside the auricle, which seemed healthy, and was not thinned; but the left ventricle appeared thicker than natural. Both these cavities contained clotted blood.

There was no appearance of aneurism of the heart, nor of any of the large vessels, which last were quite natural. There was some calcareous material at the convexity of one of the semilunar valves of the aorta: their free edges, as well as all the valves of the heart, were perfectly normal.

The lungs were congested. In the left pleura were six or eight ounces of clear fluid, without a trace of inflammation of the membrane.

The heart contained no more fat than usual, and it was not softened. The liver and kidneys were healthy.*

§ IV.—*Diseases of the Chylopoietic System.*

22. We have little to add in this section of our Report to the 'Abstracts' which will be found in the previous part of the present volume. On the diseases of the stomach, a brochure has been published by Sir James Eyre; but as it adds nothing to our knowledge, and is, moreover, an appeal to the public rather than to the profession, it needs no further allusion.

— The diseases of the liver have, however, been illustrated by a work of a very different character. A second edition of Dr. Budd's valuable treatise having recently appeared. The general scope and intent of this work was briefly adverted to in our Second Volume (p. 232), in our notice of the first edition, we have therefore only to add, that in the present edition Dr. Budd has availed himself of all the information which has since been accumulated, and has thus established his claim to be considered the author of the most complete and classical work on the diseases of the liver in our own or any language. As an instance of the care with which he has followed the advance of science, we may point to the researches of M. Bernard on the normal presence of Sugar in the Liver, a full exposition of which will be found at p. 40.

23. *Liver, Abscess of.*—A short paper on Hepatic Abscess by Mr. Tait, is to be found in the 'Edin. Monthly Journal,' (April, 1852,) with the object chiefly of illustrating its connection with tropical dysentery. This complication, he informs us, appears in two ways: in the first there is pain and tenderness

* Medical Gazette, Dec. 19, 1851.

over the right hypochondrium from the commencement of the dysenteric symptoms, with inability to lie on the left side, irritability of stomach, pain in the right shoulder, icteroid complexion, &c. In the second variety the symptoms are very obscure; there is often not the slightest pain or fulness of the right side, in fact no symptoms are perceived which give warning of the serious malady which is impending. In such obscure cases the author puts much faith in the signs to be derived from the lung on the same side, which becomes embarrassed in its action, in consequence of the encroachment of the enlarged liver. In a case of dysentery, therefore, the occurrence of dyspnœa with deficient expansion of the lower lobes of the right lung, not to be accounted for by active pulmonary lesion, is to be considered as offering presumptive evidence of hepatic complication.

The treatment of hepatitis should be conducted on ordinary principles; should suppuration ensue, the author recommends early puncture.

24. *Hydatids of the Liver.*—In a valuable series of papers published by Dr. Duncan, of Colchester,* on hydatid degeneration, we meet with an accurate description of the disease as it affects the liver. He informs us that they are found more frequently in the right lobe, may be of all sizes and numbers, and deeply imbedded or superficial. The symptoms are thus pourtrayed:

"At first little inconvenience results from the presence of hydatids in the liver, but as they increase in size, the edge of the liver descends below the cartilages of the ribs, and the patient suffers from dyspepsia, and pain in the shoulder and side. Jaundice rarely occurs until a late period, nor does the portal circulation suffer, except the hydatids are large or so numerous as to cause pressure upon the great venous trunks. Tumour below the rib in the right hypochondriac region, and elevation and expansion of the lower cartilages are the first physical signs of the disease; the tumour is ill defined, moves with inspiration and expiration, and is frequently painful to the touch, and when percussed gives a most peculiar vibratory thrill to the finger, so unique as never to be forgotten if once felt. From causes already explained, the tendency of the tumour is to enlarge, the liver increases in size, the belly feels hard and nodular, and after a while the portal and systemic veins suffer, the case ending by effusion into the cavity of the peritoneum with œdema of the legs, accompanied oftentimes by displacement upwards of the heart and lungs; or, the tumour, owing to changes in its walls, already alluded to, may burst into the transverse colon, or into the duodenum, into a gall-duct, or the gall-bladder. A natural cure is frequent under these circumstances, as also when the acephalocyst opens by ulceration through the umbilicus, or when its contents pass into a bronchial tube. But when the hydatid ulcerates and opens into a blood-vessel, into the cavity of the peritoneum—unless the structure of this membrane be very much covered by false membranes, or into the pleural sac, recovery is most unusual. The tumour may burst in two directions at once—into the bronchus and into the intestine. Recovery ensues, rarely however, by the nutrition of the acephalocyst being suspended, the fluid is absorbed, the fibrous sac contracts, and the acephalocyst is folded up within it."

On the subject of diagnosis the author observes:—"When a tumour appears in the right hypochondrium, unaccompanied by pain and severe constitutional disturbance, not preceded by inflammatory symptoms and fever, and possessing the peculiar vibratile thrill on percussion, moving also with the efforts of respiration, we may safely diagnose hydatid tumour of the liver. Abscess of

* Prov. Med. and Surg. Journal, 1851 and 1852.

the liver is preceded by constitutional disturbance of the severest character, and in this climate, in my experience, is much rarer than hydatid disease. Swelling around the cartilages of the lower ribs may stimulate the disease for a time, but pain exists, and there is no vibratile thrill. Abscess high up in the abdominal walls, or within the sheath of the rectus, is distinguished by the previous history of the case, the vague feeling of fluctuation, and the non-movement with the expiratory and inspiratory efforts. Malignant disease of the liver rarely takes on the form of tumour; usually the patches of the adventitious deposit are not raised above the surface of the organ, indeed their centre is usually depressed. An enlarged and distended gall-bladder is likely to be mistaken for hydatid tumour; but the swelling commences near the median line, is accompanied by jaundice and much constitutional disturbance, and the edge of the liver can be traced to its margin."

The treatment is thus described:—"By keeping up the powers of nutrition we may hope to arrest for a time the march of hydatid disease. Turpentine, iodine, and mercury may be given in small and repeated doses with effect; but I know of no instance of a cure. The evil day is put off for a while, and not for ever. We must look to surgical interference for aid; for, except under the most unfavorable circumstances, puncture of the acephalocyst is a safe cure. When the health is at a low ebb, and the tumour large and old, the operation will nearly always fail; but it is quite justifiable if the tumour be recent, not very large, and if the health be not much depressed. When a large, and consequently old, sac is punctured, the fibrous envelope usually sloughs; or, at any rate, so much suppuration occurs from its inner surface as to destroy life; but when the contents of a moderate-sized sac are let out the fibrous envelope collapses to a considerable extent; and on account of its being recent, tolerably thin, and not affected by those intrinsic changes which have been alluded to before, is not liable to slough. It is of the greatest importance that before an acephalocyst of the liver is punctured it be satisfactorily determined that it adheres to the parietal layer of the peritoneum, that there will be little danger of any of the fluid escaping into the peritoneal cavity. Unfortunately this can rarely be done; but it can, with certain aids, be brought about. It is usual for the acephalocyst to be adherent; its increased size and constant motion upwards and downwards tend to the production of false membrane. Some surgeons, therefore, bandage the patient, to keep the tumour steady, and open it with a trocar, and enlarge the opening in the skin and superficies afterwards. A large opening into the sac is useless; indeed, absolutely dangerous; for a little manipulation will remove any secondary cysts from the opening, and the danger of some of the fluid coming in contact with the peritoneum is in an exact ratio with the size of the incision. Others open by cautery by potassa fusa; and to this plan I certainly adhere; the risk of non-adhesion is done away with, and time is no great object. The simple serous cyst, a serous sac containing a clear watery fluid, is occasionally met with in the liver; it possesses none of the characters of the parasitic acephalocyst."

25. *The Tongue in Malarious Diseases.*—Dr. Osborne, an American physician, has called attention to a peculiar condition of the tongue in patients labouring under miasmatic diseases. It consists in an alteration of the edge, with a bluish tinge, varying in depth, and a remarkable crumpling or transverse indentation, caused apparently by an encroachment of the inferior surface of the organ upon the lateral borders. He has observed it in neuralgia, and dropsy arising from malaria, and has considered it in all cases to be an indication for quinine.

26. *Ileus, terminating in Recovery after Fourteen Days' Destruction.*—A case which points very forcibly to the advantage of a judicious expectant treatment in certain cases of intestinal obstruction, has been recorded by Mr. Soden of Bath. The case is as follows:

"A gentleman, sixty-three years of age, short in stature, of a nervous sanguine temperament, and of active and extremely temperate habits, who had for twenty years enjoyed uninterrupted good health, on Oct. 16th, 1851, feeling indisposed, and having for a short time previously had his digestion out of order, took an active aperient. It affected him with unusual severity till next morning. He was then sufficiently well to occupy himself in his garden. At dinner, he ate a small quantity of meat; soon afterwards, he was seized with violent spasmodic pain in the abdomen. He took a large dose of castor oil with a few drops of laudanum, but ineffectually; an emetic of Ipecacuanha was then tried. The emetic action was not easily induced. An enema of warm water and a warm hip-bath were next had recourse to, but with no immediate relief. Towards evening, however, he became gradually better, and passed a tolerable night.

On the following morning the pain returned with the same severity, and Mr. Soden then saw him for the first time. He was in an alarming condition. There was frequent vomiting of a dark-coloured and very offensive matter. The spasms were intense; there was an anxious countenance, and, impending prostration. There was general tenderness about the umbilicus, chiefly on the left side, attended in this position by marked dulness on percussion: however, neither the dulness nor the tenderness were sufficiently circumscribed to indicate the precise seat of the constriction, supposing such to exist. The patient was subject to inguinal hernia; and, in spite of the large dose of oil (one ounce) that had been administered, there had been no passage from the bowels since the commencement of the attack. Uncertain whether he had to deal with an internal hernia or an attack of ileus, Mr. Soden at once determined to abstain from all aperient medicine, and prescribed small doses of calomel and opium to be administered every two hours. Mustard poultices, and such local means as seemed to afford alleviation, were also used. In the evening he was no better, and the ejections were now of a most suspicious appearance. The pills were continued, with an increased quantity of opium, and a turpentine enema was given.

19th. The matters vomited were now purely fæcal. The prostration was very great. The pills had appeared to agree in invariably prolonging, after each dose, the interval from spasm and vomiting; but they produced no other benefit. Mr. Soden now administered one more opiate, without the calomel, and then followed out the expectant treatment, not allowing anything to go into the stomach. Early in the morning, he had made another trial with the injection, having passed a long flexible tube into the bowel, to about twelve inches, throwing up as much warm water as the patient could bear, trusting, that if the disease arose from any mechanical cause, some relief might be afforded. The operation caused no distress to the patient, but the water came away perfectly clear.

From this date up to the 30th, the smallest possible amount of food was given, and this was some beef-tea per anum. Throughout, the symptoms were most discouraging: small doses of prussic acid, and sucking lumps of ice, seemed to give most relief. On the 26th, he was in some respects better. The patient's aspect was improved. At six o'clock in the morning, the bowels were moved for the first time from the commencement of the attack, on the 17th of October, a period of thirteen days; the stool was liquid, small in quantity, and healthy in appearance.

Nov. 1st.—The bowels again acted. From this date the case did well. No relapse interfered with a gradual and progressive convalescence.*

§ V.—*Diseases of the Genito-Urinary System.*

Although our extracts in the present volume are both numerous and important, renal disease has of late commanded so much attention that the subject is far from exhausted, and we proceed therefore to notice some other communications which appear to us worthy of commemoration.

27. *Uric Acid Crystals, variety of.*—Dr. Lyons describes a variety of uric acid crystals of a novel appearance, which he found mixed with those of the ordinary form. Their colour varied from a reddish fawn to a deep brown red; the smallest were tabular or lozenge-shaped, the longest diameter being $\frac{1}{500}$th of an inch; the largest were flat, thin, oblong, and varied in outline, their longest diameter between $\frac{1}{20}$th of an inch. All these crystals are described as presenting an unusual grouping.†

28. *Morbus Brightii.*—A monograph on this subject by Dr. Frierichs has recently reached this country, and is ably reviewed by two of our contemporaries,‡ from whom we borrow the subjoined analysis, not having had an opportunity of seeing the original.

The anatomical changes in the kidney are divided, by the author, into three. 1. The state of hyperæmia. 2. The state of exudation and commencing metamorphosis of the exudative matter. 3. The state of degeneration and atrophy.

"In the first of these, which is frequently attended by hæmorrhagic effusion from the glomeruli, from the capillary plexus surrounding the urinary tubuli, or from the veins upon the surface of the cortex, the epithelium of the tubuli is not essentially changed, although the canals themselves, especially those of the cortical substance, are commonly filled with coagulated fibrin. These coagula are sometimes perfectly simple, and present themselves in this condition as casts of the tubes in which they are formed, while at other times parts of the epithelial lining, or more or less changed blood-corpuscles, may be found imbedded in them. This condition is not often met with anatomically, (20 times in 292 *post-mortem* examinations), and is then the accompaniment of an acute, violent illness. The disease when chronic is rarely fatal at so early a period.

"In the second stage the process of exudation increases, while the hyperæmic condition becomes less marked. Metamorphosis of the exuded matter follows; the epithelium and the fibrinous casts of the tubuli break up into fatty molecules. In the Malpighian corpuscles similar exudation and fatty matter are seen lying between the capsule and its contained glomerulus, and then these bodies are raised above their natural size; but as long as the stream of secretion, poured from the glomeruli, is sufficiently powerful to remove the coagula of fibrin, this increase of dimension is not observed. In the urinary canals, especially those of the cortical substance, important changes are in progress; the epithelium undergoes complete transformation, losing gradually the form

* Provincial Medical and Surgical Journal.

† Dublin Quarterly Journal, Feb. 1852.

‡ Brit. and For. Med.-Chir. Rev., April 1852. Medical Times, and Gazette, Feb. 14, 1852.

of its cells, presenting fatty infiltration to a variable extent, and ultimately losing its characteristic appearance and function, and becoming replaced by granular detritus and fat. This second stage was found in 139 in 292 examinations. It embraces the 1st and 2d forms of Bright; the 2d, 3d, and 4th of Rayer and Rokitansky; the 2d, 3d, 4th, and 7th of Christison; and the 2d and 3d of Martin Solon.

In consequence of the degeneration of fibrin in the urinary tubuli and the Malpighian corpuscles, and the removal of this with the more or less transformed epithelium, the walls of these structures collapse, and part of the kidney is atrophied. It is this which constitutes the third stage of Bright's disease. This atrophy is brought about in some cases by the contraction of plastic matter, when the latter has been exuded into the interstitial textures. This is rare, however, and when present is only a co-operative cause of atrophy. This 2d stage of Frierichs corresponds with the 3d of Bright, the 5th and 6th of Rayer, the 5th and 7th of Rokitansky, and the 4th of M. Solon.

Among the not constant anatomical changes of the kidney, Frierichs enumerates and describes—1. Apoplexy. 2. Suppuration. 3. Cystic formations. 4. Calculous deposits. 5. Tubercle, &c. In the paragraphs upon the chemical changes in the kidney, the amount of solid constituents is given, and the proportion of fat in a hundred parts of dried kidney substance. In health the latter varies from 4·4 to 5·05 per cent. In morbus Brightii it was found varying from 4·40 to 13·9. Generally speaking, the quantity of fat was greater when the disease had advanced to the third stage, but this is not invariable; and the fact, that by chemical examination the quantity is often found to be much less than microscopic observation would lead us to expect, must, according to Frierichs, be considered as a proof that we are not justified in naming as fat all those globules which resemble it in form. In the kidney of a cat, and in that of a dog, the fat was found by Frierichs to vary from 27·20 to 32·50 per cent. Both animals were perfectly healthy; their urine contained not a trace of albumen, a sufficient proof that morbus Brightii cannot be considered dependent solely upon fatty degeneration.

A statistical report, and tabular representation of the changes found (*post-mortem*) in other organs, concludes the second chapter of the book. The cases are gathered from Bright, Christison, Gregory, Martin Solon, Becquerel, Rayer, Bright and Barlow, Malmesten, and the author's own observation.

The third chapter presents a short account of the general course of the disease in its two forms, acute and chronic; and the fourth, entitled "Special Symptomatology," is engaged in a detailed description of the special symptoms of the disease. A close analysis of this portion of Frierich's work is given in the 'British and Foreign Med.-Chir. Review;' but as there is here less of novelty than in some other parts, we pass on to the subject of Uræmia or Uræmic intoxication, which is justly considered by the reviewers as the most original part of the book.

The acute form of Uræmia commences suddenly, and declares itself in one of three ways; by depression of the cerebral functions, by spinal irritation, and by both conjoined. In the first form a serious and frequently fatal coma ensues; in the second and third, convulsions simulating epilepsy are associated; these symptoms are the result of sudden suppression of urine.

The chronic form of uræmia comes on slowly and insidiously. In the early stages of Bright's disease there is a peculiar dullness or sleepiness in the expression of the face, and in the aspect of the patient. He has headache, and his memory is impaired. The symptoms are regulated by the secretion of urine, being severe when it is scanty, and moderated, or disappearing for a time, when it is more abundant. In other instances the sleepiness merges

into coma; at first the patient can be roused, but at length the coma becomes profound.

Vomiting is well known to be a frequent symptom of uræmia. Frierich states that the ejected matter is generally alkaline, and contains carbonate of ammonia. In some cases he thinks the vomiting postpones the nervous symptoms by affording an exit to the products of decomposed urea.

The cause of these symptoms of uræmic poisoning has been a subject of dispute. They have generally been attributed to the retention of urea in the blood. Frierich's theory is that they arise from the conversion of the urea into carbonate of ammonia while in the blood-vessels, and that in order to induce them, not only must there be an accumulation of urea, but also a ferment capable of inducing this decomposition. In support of this theory he adduces the result of experiments by injecting carbonate of ammonia into the blood, which he maintains causes analogous symptoms.

The following chapters contain an enumeration of the complications of Bright's disease, its duration and course, and its terminations. Of the acute forms, Frierich states that two thirds terminate favorably, of the chronic no more than one ninth. The causes are considered in the ninth chapter, the forms of the disease in the thirteenth, and the treatment in the fourteenth.

In devising a plan of treatment for the disease, Frierich keeps in view,—1, the presumed cause; 2, the presumed condition of the kidney; and, 3, the secondary symptoms.

In the first stage he recommends bloodletting, but cautions against the proclivity to the production of anæmia, or rather hydræmia, which is an essential feature of the malady. He does not advise counter-irritation on the lumbar region. Diaphoretics are valuable, and antimony is advised in the acute form, guaiacum and the vapour bath in the chronic variety.

In the more advanced stage iron is called for, and Frierich prefers the lactate. Of diuretics he speaks diffidently; they are, he thinks, contra-indicated when there is lumbar pain; in the case of uræmic intoxication they are called for; if they fail, the bowels must be stimulated to vicarious action. For the vomiting creasote is occasionally useful.

— Another contribution to the literature of Bright's disease, in no wise to be passed over, is one by Dr. Morehead, giving a history of the affection as it is observed in a tropical climate.* The object of the essay in question is to solve a question hitherto neglected, viz., whether the disease is as frequent in hot as in the temperate zones? The number of cases recorded is 31.

It appears from the analysis of these cases that the disease was as frequent among the hospital frequenting classes of natives, as in the cities of Europe, but it is probably to be regarded as due to habits engendered by European contamination, rather than to any proneness to the disease incidental to the native constitution. In carrying out his investigation of the disease, Dr. Morehead inquires into the following points: 1. The months of the year in which it has been observed. 2. The classes of natives chiefly affected. 3. The period of life in those affected. 4. The habits of the patients. 5. The secondary affections. 6. The pathological appearances. 7. The character of the urine. 8. The treatment.

* Notes on Bright's Disease of the Kidney, as observed in the Jamsetjee Jejeeboy Hospital, Bombay. 'Transactions of the Medical and Physical Society of Bombay,' No. x.

II.

REPORT ON THE PROGRESS OF SURGERY.

BY THE EDITOR.

Bibliography.

We have received the following works connected with the department of Surgery since the date of our last report:

I. *The Principles and Practice of Surgery.* By William Pirrie, F.R.C.S. London, Churchill.

II. *On the Diseases of the Bladder and Prostate Gland.* By William Coulson. 4th. Edition, London, Churchill, (*vide* § V.)

III. *On the Anatomy and Physiology of the Male Urethra, and on the Pathology of that Canal.* By Henry Hancock, F.R.C.S. London, Highley and Son, (*vide* § V.)

IV. *The Pathology and Treatment of Stricture of the Urethra.* By John Harrison. London, Churchill, (*vide* § V.)

V. *On Syphilis, Constitutional, and Hereditary, and on Syphilitic Eruptions.* By Erasmus Wilson. London, Churchill, (*vide* § VIII.)

VI. *On Lateral Curvature of the Spine.* By W. Tamplin, F.R.C.S.E. London, Churchill, (*vide* § IV.)

The 'Principles and Practice of Surgery' by Dr. Pirrie, is a recent addition to a somewhat numerous series of surgical class books, and appears to have been published for, and at the request of the author's pupils. Although it cannot be supposed to have pretensions superior to the well known writings of Liston, Miller, South, and others, it must be allowed to be a trustworthy guide to the class for whom it is designed, and to have the merit of a conciseness of expression which is not always to be found in writings of a similar class. The illustrations, which are partly original and partly borrowed from Liston and Bennett, are exceedingly well executed. The work is composed of twenty-five chapters, which are thus distributed: Chapters 1 and 2, Inflammation and Erysipelas. 3. Wounds. 4. Burns. 5, 6, 7, 8, 9 and 10, are occupied with various Injuries and Diseases of the Bones and Joints. 13. Hernia. 14. Wounds of Abdomen. 15, 16, and 17. Affections of the Genito-urinary Organs. 18 and 19. Operations. 20. Affections of the Rectum. 21, 22, 23. Affections of the eye, nose, and throat. 24. Tremors. 25. Affections of the Breast. It is thus seen that the work is comprehensive in its character, and will doubtless be appreciated by many a student and junior practitioner.

§ I. *Anæsthesia.*

Some time having elapsed since we reported on the introduction of anæsthetic agents, our space will be now well occupied by a glance at what has recently transpired on a subject of such universal interest.

1. A very comprehensive review of the subject as it at present stands, is to be found in the 'British and Foreign Medico-Chirurgical Review,' in which most of the recent writings on anæsthetic agents are brought under notice. The reviewer, after alluding to the history of anæsthesia, which he traces back to the time of Pliny, gives an account of fatal cases, which it appears have been 23 in number; he then proceeds to consider: 1. the physiological and toxicological effects of anæsthetics in general. 2. The varieties of these agents and other comparative merits. 3. Their practical uses.

On the first division of his subject the reviewer treats of the internal and external phenomena of anæsthesia, its effect on particular organs and functions, the *post-mortem* appearances, and the *modus operandi*. The symptoms induced by inhalation are by this time generally familiar. There may be at first cough, with increased flow of saliva; then the respirations become deepened, the pulse quick, and the eyes injected. At this time, in some instances, there may be convulsive movements of various intensity and duration, in others singing or shouting. As inhalation proceeds, the patient becomes quiet, the eyes move in different directions, but soon the ball turns up and the lids drop; the pulse begins to be slackened, and the muscles relax. This is the wished for condition; if it be surpassed, symptoms of more or less seriousness may ensue, indicated by failing pulse, stertor, lividity of the face, &c. The reviewer mentions the different stages into which anæsthesia is divided by writers; as well as the differences which are observed with regard to the actual or supposed abolition of pain. On this point he quotes M. Bouisson, who notices four categories of patients with reference to this particular, which are:

1. Those who suffer and preserve their intelligence. 2. Those who lose sensibility and intelligence together. 3. Those who preserve their consciousness, but lose their sensibility. 4. Those who, though unconscious, appear to suffer.

The effect of anæsthetics on particular organs is next considered. The reviewer alludes to the experiments of M. Serres on direct anæsthesia, by which it is shown, that if ether be applied to a nerve, sensibility is lost below the contact, but is retained above it. He then describes the gradual action of the agent upon the several portions of the nervous system, and concludes, that its first action is upon the cerebral lobes and cerebellum, then upon the annular protuberance and centres of common sensation, afterwards upon the spinal cord, and, lastly, on the medulla oblongata.

The influence upon respiration, the pulse and temperature, are next reviewed. The respirations gradually lose their frequency, and carbonic acid, which at first is more abundant in the expired air, subsequently becomes less so. The pulse is variously affected, but is generally quickened in the first instance, afterwards becoming slower. The temperature, which is at first increased, soon becomes remarkably diminished.

In his record of the pathological appearances in fatal cases of anæsthesia, the reviewer is guided by writings previously noticed by us, viz., those by Mr. Wakley and Mr. Nunneley.

The *modus operandi* of anæsthetic agents is much disputed. By some, as by Dr. Ramsbotham, it has been called intoxication, but to this view the

reviewer refuses to subscribe. He thinks these agents may act in more than one way. 1. In inducing a modification of asphyxia. 2. By destroying the power of the nerves to convey impressions, and the power of the brain to receive them.

The list of anæsthetic agents is very numerous; but for practical purposes two only are to be considered, ether and chloroform. There are, however, several others which possess marked anæsthetic powers. Of the two above mentioned the balance of opinion is in favour of chloroform. Dr. Warren prefers ether, and Dr. Flagg also; as, indeed, is the case with several other American surgeons.

In passing on to the more practical portion of his remarks, the reviewer first speaks of the mode of exhibiting anæsthetic agents, and describes succinctly the several forms of apparatus which have from time to time been devised. He does not favor inhalers, preferring, with Dr. Simpson, a sponge or folded handkerchief.

The indications for the employment of anæsthesia are next entered into, the reviewer subscribing in the main to the opinions of M. Bouisson. This writer advises that inhalation should never be practised within the first six months of life; and that up to the second year ether alone should be used, chloroform being reserved for more matured years. In advanced age he likewise prefers ether. With regard to the morbid states which contra-indicate anæsthesia, M. Bouisson states that it is inadmissible under the following circumstances:

1. In patients weakened by hæmorrhage or spontaneous chlorotic anæmia.
2. In epileptic and hysterical persons.
3. In persons predisposed to cerebral congestions, or who have cerebral softening.
4. In persons liable to syncope.
5. In persons predisposed to hæmoptysis or pulmonary apoplexy.
6. In those who have organic lesions of the heart or great vessels, with feeble or intermittent pulse.

There are certain operations which in themselves offer contraindications. Bouisson would not exhibit chloroform in any trivial operation; neither in those requiring the active co-operation of the patient, as in certain operations upon the rectum. In those in which sensibility is required as a guide to the surgeon, he likewise refuses, as in ligaturing arteries, during which, if the patient be unconscious, a nerve might be included in the ligature; also in operations of lithotomy and lithotrity. In these latter operations, opinion as to the advisability of anæsthesia is much divided, both on the continent and in this country.

The reviewer next speaks of the influence of anæsthesia on the results of operations; which he, in common with all unprejudiced observers, admits to be in the highest degree favourable. As a proof of this he quotes Dr. Simpson's paper on the subject, which has been noticed by us in a former Report, (vol. VII, p. 249.)

The remainder of this excellent review is occupied with the practical application of anæsthesia in midwifery and practical medicine, subjects foreign to our present Report.

— In an essay by Dr. Snow,* important information is imparted in the prevention and treatment of accidents from inhalation of chloroform. The great means of safety is stated to be the precaution to have the vapour

* On the Causes and Prevention of Death from Chloroform. London Journal of Medicine, April, May, and June, 1852.

sufficiently diluted with atmospheric air. As regards the opinions noticed above, that disease of the heart is a contra-indication to the use of anæsthetics, the author of this communication states that there is no good reason for such an impression. He has, he says, frequently exhibited chloroform successfully when disease of that organ was known to exist, and, on the other hand, in the fatal cases which have been examined, such disease was not noticed in any instance, at least to a marked degree. The same opinion is entertained by Dr. Sibson.

In the treatment of an over dose of chloroform, Dr. Snow puts the greatest faith in the performance of artificial respiration; which he believes would in most cases be successful, if employed within half a minute of the cessation of natural breathing. For this purpose he recommends applying the mouth to that of the patient, and thus inflating the lungs. Electricity is considered valueless if once the action of the heart has ceased.

— A discussion on the value of chloroform, which took place at a Medical Society in Philadelphia, is reported in the 'Medical Examiner.'* Many of the opinions expressed were highly favorable, but others were decidedly behind the age. Dr. Condie, who opposed its use, does not seem aware of Dr. Simpson's statistics of the relative mortality with and without anæsthesia in several operations. We commend the paper to his perusal.

— Alluding to a fatal case which has recently occurred, Mr. Herapath states that he has seldom seen injurious effects in his own practice, which immunity he attributed to the following precautions: 1st. Never to administer it to any patient with a full stomach. 2dly. To take particular care that the vapour is diluted with plenty of atmospheric air, invariably employing a cupped sponge, with large holes, applying but a small quantity of the liquid at one time. 3dly. Never to proceed to stertorous respiration, if it can be avoided. As soon as the patient becomes insensible to sound, or the pupils dilate, to intermit the application of the chloroform, and operate at once, if necessary, applying the sponge again and again, for short periods, in order to keep up the anæsthetic effect. It is never necessary, he observes, to make the patient lie like a breathing log, as is known to occur in the practice of other parties. Death from chloroform takes place, in his opinion, in consequence of the density of the air mixed with the heavy vapour of the chloroform being nearly equal to or greater than that of the carbonic acid to be expelled from the blood; thus, the density of carbonic acid gas at 60° is one and a half that of atmospheric air; consequently, oxygen and nitrogen endosmose through the membranes of the pulmonary air-cells and capillaries, whilst carbonic acid exosmoses through the same membranes, according to the known laws regulating endosmosis of gases—namely, "in inverse proportions to the square roots of their densities." If, then, the density of the inspired air be increased by adding the vapour of chloroform to it, of course carbonic acid accumulates in the circulating fluids; it does not exosmose through the membranes at the same rate. The nearer the two densities correspond, the less carbonic acid escapes from the blood, and the function of respiration no longer goes on. The author mentions also another circumstance worthy of attention. Atmospheric air at 60° saturated with the vapour of chloroform, has a specific gravity of 1·355, and is therefore perfectly respirable; but increase the temperature of the air to 70°, and it will take up a much larger quantity of the vapour, by which means the specific gravity will be increased to 1·533. It is, therefore, he observes, necessary to pay attention to this

* April, 1852.

point also, or danger will ensue, This is more especially requisite where inhalers are employed; a good cupped sponge, moistened with cold water, has, in Mr. Herapath's opinion, numerous advantages over every variety of inhaler, the chief being, that the rapid evaporation of the chloroform diminishes the temperature of the air as it passes through the interstices of the sponge, thus decreasing the specific gravity of the mixed gases for respiration, and consequently adding to the safety of the patient.

There are, he continues, other causes why chloroform impedes and destroys the powers of life. The local anæsthetic effect of the vapour upon the ramusculi of the pneumogastric nerves, distributed on the air cells, destroys their excitability; they no longer carry that excito-motory power to the medulla oblongata, so necessary to produce the mechanical movements of the respiratory phenomena; consequently the motor nerves no longer stimulate the respiratory muscles to action. Again, the blood, highly charged with chloroform and carbonic acid, and deficient in oxygen, may act centrically on the medulla oblongata, destroying its nervous energy and paralysing its functions.

In resuscitating from an over-dose of chloroform, Mr. Herapath considers galvanism to be the only chance. His advice is to keep up a current of electricity through the fifth nerve, medulla oblongata, phrenic nerves, and diaphragm, as long as respiratory movements can be produced, and to let the patient have plenty of fresh air or oxygen gas; the case, then, must do well, for the blood will remain fluid for a long time, and circulation will go on as long as respiration continues to be carried on artificially. The blood and the air-cells throw off their load, and in proportion as the pneumogastric, medulla oblongata, and motor nerves, slowly resume their functions, so respiration begins to assume a less artificial character; at length the cerebrum aids us, and respiratory movements, both voluntary and involuntary, keep up the functions of life unaided.*

§ II.—*Injuries and Diseases of Arteries and Veins.*

2. *Aneurism, treatment by Pressure.*—Mr. Pirrie† devotes a few lines to the discussion of this mode of treating aneurism, from which we gather that, upon the whole, he considers the revival of the practice as a valuable addition to our surgical appliances in the disease. "It may now be said," he observes, "that this mode of treatment has received the approval of all leading surgical authorities with the exception of Professor Syme."

—Three cases of popliteal aneurism, treated by pressure, have to be recorded. In two of these deligation was subsequently required, and was followed in one case by death, and in the other by amputation of the limb. The third case was completely successful.

The first case alluded to occurred in the practice of Mr. Cock, of Guy's Hospital:

"J. E—, æt. 29, a carpenter by trade, and living in Camberwell, was admitted into Stephen's ward, Sept. 10, 1851. The patient is a strumous-looking subject, now very much out of health; he has not, however, had much illness, though not altogether very temperate. Four months before admission he had begun to feel a stiffness and swelling under his left knee; this was accompanied with very little pain for some time, but within the last month the symptoms have become much aggravated, the pain assuming a

* Lancet, March 27, 1852. † Op. cit., p. 533.

throbbing character. He nevertheless continued to attend to his trade, but has been obliged to desist for the last three weeks.

"On admission, a swelling was observed in the left ham; the tumour was of large size; it occupied the whole of the popliteal space, the circumference around the knee being sixteen inches. The pulsations were very distinct; they ceased on pressure being applied over the femoral artery, and the 'bruit de soufflet' was easily discernible. The pain in the tumour itself, and in the leg, was very severe, and the patient very weak. Mr. Cock ordered a purgative, and subsequently an anodyne, at night. The throbbing pain went on increasing for the next few days; the patient slept little at night, and complained of general debility.

"Mr. Cock now directed compression of the femoral artery to be made in Scarpa's space by means of the circular tourniquet; the compressing force to be used in the groin by holding a weight upon the vessel whilst the tourniquet lower down was relaxed. A roller was at the same time applied from the toes up and over the tumour, and tincture of digitalis ordered to diminish arterial action.

"The pressure was very ill borne by the patient; it was, however, kept up for five days, after which time he made very loud complaints. Ice was then applied to the tumour, but this did not alleviate the pain; on the contrary, the effect was such that it was found necessary to give it up, and administer a full dose of opium. Three days afterwards, as the tumour was evidently increasing, Mr. Cock tied the femoral artery in Scarpa's space.

"Matters now progressed very favorably for some time; the patient felt very comfortable, and the pulsations of the popliteal tumour had completely ceased. Mr. Cock, finding the pulse small and compressible, ordered porter, four ounces of brandy per diem, and quinine in infusion of roses. The wound now assumed a healthy character, the swelling in the ham diminished and assumed more consistence, and the case seemed to hold out a fair prospect of success. Thus matters went on until the fourteenth day after the operation, when the wound in the thigh began to discharge a large quantity of fetid pus, and the patient had a severe attack of diarrhœa. Astringent remedies, combined with ammonia, were prescribed, and ten ounces of wine per diem allowed.

"On the nineteenth day the diarrhœa was checked, and bitters were now substituted for the astringent mixtures. The ligature came away on the 24th day, but the wound went on discharging unhealthy pus, and the swelling in the groin seemed again to increase. The patient did not complain of pain, but he was very low, had no appetite, and now began to cough.

"One month after the operation severe rigors came on, a hectic flush was observed on the cheeks, the whole thigh seemed in a state of suppuration, and the aneurismal sac looked softened and greatly enlarged. Under these circumstances, Mr. Cock thought it prudent to evacuate the contents of the sac; the opening was made with a trochar, and gave exit to about six ounces of exceedingly offensive, half-decomposed blood. A second puncture was made three days afterwards with the same result, and in neither instance was there any purulent matter evacuated.

"The patient experienced much relief from these measures; but about a week afterwards he had a fresh attack of diarrhœa, for which starch enemata and opium, in the form of suppository, were used, but with little success. Evident symptoms of pleurisy now supervened, the patient's strength entirely failed him, and he sank on the 11th of November, two months after admission, and forty days after the deligation of the artery."*

* Lancet, Dec. 27, 1851.

The second case is similar as regards the inefficiency of pressure; but as appropriate instruments were not available in the first instance, the failure can hardly be taken as evidence against the operation. This case occurred in the Norfolk and Norwich Hospital, and is reported by Mr. Bateman, the house-surgeon.

"B. W—, æt. 34, admitted Nov. 15, 1851, under the care of Mr. Norgate. He is a strong, healthy-looking man, of a sanguineous temperament, is married, and his occupation is that of a farmer's labourer. His father died at the age of thirty-three, from the rupture of a blood-vessel; his mother is alive and in good health. He has had intermittent fever twice; seven years ago he had rheumatic fever, which lasted sixteen weeks; and he has been subject to occasional slight rheumatic attacks since; also occasional seizures of acute pain in the præcordial region, stopping his *walk* or *work*. He has never had venereal disease, nor has he been addicted to drinking.

"About ten or eleven weeks before admission, having 'felt a stiffness in the left ham' when he rose from the sitting posture, his attention was directed to that region, when he perceived a tumour of about the size of a nutmeg. He has no recollection of having strained himself, nor can he assign any cause for the appearance of this tumour. On the discovery of it he applied poultices for two or three nights, and the pain was removed. In about three weeks he again felt uneasiness in the tumour, which gradually increased in size up to the period of his admission. He did his work up to Nov. 8th, on which day he was at plough.

"*Condition on Admission.*—There is a pulsating tumour in the left popliteal space, fusiform in shape, and of about the size of a small hen's-egg. On the application of the stethoscope, a distinct *bruit de soufflet* is heard, which, as well as the pulsation, ceases by making pressure on the femoral artery above. It can be entirely emptied of its contents, which are fluid. The fascia closing the popliteal space is tightened, but there is very little distension of the veins or infiltration of the limb; pulse about 80, regular. There is no evidence of cardiac disease beyond a slight roughness in the sounds. The left lung is not in so satisfactory a condition as one could wish; there is some dullness on percussion, with deficient expansion of the corresponding side of the chest. The patient was ordered small doses of digitalis and hyoscyamus, three times a day. Middle diet, without beer.

"Mr. Norgate was desirous of attempting the cure of this case by compression, by means of the instruments used by the Irish surgeons, and had already ordered them to be made; but on the 20th of November the tumour had so increased in size, and with it the discomfort of the patient, that it became necessary to do something at once; and therefore, as a temporary means, it was resolved to make pressure with Lignorini's tourniquet, which was applied over the femoral artery at the upper third of the thigh.

"Nov. 25th.—Pressure has been continued since the 20th, but has been unfortunately applied in an imperfect manner, for want of proper apparatus; meantime the tumour has enormously increased in size. Pressure is now being made by means of the thumb of another person applied over the artery at the groin, and great ease thus procured to the patient.

"26th.—Pressure, as employed yesterday, no longer affords relief to the patient; he is writhing with pain, which he describes as existing all over the knee, ham, and leg, accompanied by coldness of the foot. The aneurism has now all the appearance of having become diffuse; the entire ham is one pulsating mass; the tumour has extended up the inner aspect of the thigh to the extent of two inches; with all this obstruction there is still but very slight œdema of the leg. Ordered forty minims of Battley's solution, to be

taken directly. Bleeding to fourteen ounces. To have ten minims of tincture of digitalis every six hours, and a brisk cathartic at night. All compression to be discontinued.

"27th.—Patient comparatively easy since the bleeding; the blood drawn is highly buffed and cupped.

"29th.—The remedies adopted having somewhat quieted the system, it was resolved to tie the femoral artery, which was accordingly done to-day, at half past twelve, the patient having been previously put under the influence of chloroform. The vessel was secured just where it is crossed by the inner edge of the sartorius. Two, p. m.; pulse 85; begins to feel pain in the leg, similar to that which he experienced prior to the operation; the pain is more severe in the calf. Half-past two, p. m.; he now describes the pain as excruciating. Half a drachm of Battley's solution, to be taken directly.—Three p. m.; pain slightly diminished; foot quite warm, but he says he cannot feel it.

"30th.—A grain and a half of acetate of morphia has been given in three doses during the night: this morning he is much easier, and says he feels his toes. Pulse 140.

"Dec. 1st.—Pulse 108. Circumference of ham very much diminished, considerable tension in the ham, with a brownish discoloration and much pain; there is also commencing lividity of the foot and loss of sensation as far as the ankle. Temperature of sole, 83°, that of ham, 90°.

"2d.—Pulse 105. The patient is much easier; the lividity of the foot has increased and has extended somewhat beyond the ankle; there is less tenderness and tension in the ham; but the pain on pressure is now felt lower down in the middle of the leg. Temperature of the sole, 77°.

"5th.—There is now considerable lividity of the foot to two inches beyond the ankle, at which point there is an obscure line of demarcation; beyond this the temperature is good and the limb appears restored; the entire surface below this mark is discoloured, but in some places more than others, forming patches; œdema of foot. To have a mutton chop, brandy, eggs, &c.

"6th.—Vesication has commenced on the inner side of the ankle. The entire limb to be placed on an elastic cushion filled with hot water.

"7th.—Discoloration having now commenced in the calf, a consultation was held, and the immediate removal of the limb unanimously recommended. Mr. Norgate accordingly amputated the thigh about four inches above the knee.

"Nothing worthy of record occurred during the convalescence of the patient, who was discharged, January 24th, with the stump quite healed.

"*Dissection of the Limb.*—The aneurism, occupying the whole popliteal space, was of a nearly globular form, five inches long by four inches broad, and was nearly uncovered in making the posterior flap, the artery being cut about an inch from its expansion into the tumour. The minute examination of the tumour disclosed that it had its origin on the anterior and outer side of the vessel, and that its walls had given way when it had attained the size of a large walnut; also that it had become partially diffused into the inner head of the gastrocnemius, the aponeurosis of which formed its boundary above, and the torn muscular substance below. All the articular and the sural arteries were obliterated by pressure, or had their origin from the sac itself; the popliteal vein and nerve lay in a groove of the tumour, and had been subject to great pressure, as was, to a less degree, the peronæal nerve. The muscles of the posterior aspect of the limb were much altered in colour, though not shrunk in bulk, being mottled with what appeared to be fat in the interstices of their largest fibres. Above and below the disease the vessels

were in a healthy state, save only the usual obliteration above the commencing line of demarcation. The *cure* of the aneurism had begun by the formation of a firmish clot with some fluid blood below. The posterior ligament of the knee-joint was not diseased, nor the synovial membrane.*

— The third case is narrated by Mr. Stephens, of Newcastle. William Pott, a fisherman, aged 50, came under his care in September last with a popliteal aneurism. The tumour at that time was the size of a pullet's egg cut in two, felt hard to the touch, and pulsated strongly, which pulsation was easily stopped by pressure on the femoral artery. He being unwilling to undergo an operation, Mr. Stephens determined to make a trial of compression. Two pads were fixed on the femoral artery by means of elastic ring tourniquets, but not so tight as to completely control the pulsation in the tumour. On the following day the upper one was slackened, and the two were afterwards alternately tightened and loosened, for about twelve hours at a time. In about seven days the foot and ankle became so tender and painful, that the patient begged to have the apparatus taken off. It was, however, continued with a diminished pressure. On the eighth day the pulsation had diminished, but not ceased. On the ninth day the apparatus was taken off, and reapplied on the tenth. On the eleventh the tumour had somewhat increased; on the twelfth it was scarcely perceptible; and on the fifteenth no pulsation was to be felt. The leg and foot became extremely cold and pale, but the heat was gradually restored by means of friction and flannel bandages. On visiting him about three weeks after, the author found the tumour nearly gone, and the patient has now resumed his employment.†

3. *Axillary Aneurism, and Ligature of the Subclavian.*—Two cases are recorded during the present semestrial period in which the subclavian artery has been tied for axillary aneurism.

The first case, related by Mr. Mackenzie,‡ afforded an instance of a form of aneurism first specially described by Liston, in which an abscess communicates with a large vessel. In the case of Mr. Liston, the swelling was mistaken for a simple abscess and punctured. The case in question was that of a young man, seen on the 26th November last, with a pulsating swelling resembling aneurism beneath the right clavicle. It was seen also by Mr. Syme, who agreed with the author as to its aneurismal nature. About the middle of June, after sleeping a whole night in the open air, and on damp grass, he was seized with pain in the upper and fore part of the right side of the chest, and in the front of the shoulder, which was aggravated by taking a full inspiration. He did not apply, however, for medical advice, and continued at his employment up to within two days of his admission into the hospital.

Three weeks ago, he, for the first time, observed a swelling below the right collar bone, of considerably smaller bulk than the tumour which now occupies the subclavicular space. This swelling was not painful on pressure, and, as far as he is aware, was devoid of any pulsation. He did not pay much attention to it, and did not connect it in his mind with the pain of his arm till within the last three or four days, when the pain of the limb became much more severe, and he perceived a strong pulsatory movement in the swelling. He then for the first time applied for medical advice, when the nature of the tumour was recognised.

The symptoms which existed at the time of his admission into the hospital may be briefly stated as follows:—Severe and constant pain referred to the

* Lancet, April 10. † Med. Times, and Gazette, April 3.

‡ Edinburgh Monthly Journal, Feb. 1852.

inner side of the right arm and fore-arm, but chiefly around the elbow. A circumscribed pulsating tumour, of the shape and size of a turkey's egg, situated immediately below the right clavicle. The tumour occupied the situation of the first stage of the axillary artery, projecting immediately below the clavicle, and extending to the axilla, where it could be felt by the fingers pressed behind the pectoral muscle. The integuments covering the tumour were not tense, but marked by the course of two or three large veins. On slight examination, its consistence appeared to be tolerably firm; but on steady moderate pressure being made with the hand, its fluid contents gradually receded, till the swelling was nearly quite effaced. It immediately reappeared with an expanding pulsatory movement on the pressure being removed. Pressure on the subclavian artery above the clavicle in the same way speedily produced complete subsidence of the swelling, which again rapidly regained its former size on the finger being removed. On applying a stethoscope to the tumour, a loud *bruit de soufflet* was heard accompanying each stroke of the heart, and this was rendered more intense on allowing the tumour suddenly to re-fill after pressure being made on the artery above the clavicle. The brachial artery was felt pulsating feebly along the inner side of the arm, and the pulsation of the radial artery was scarcely perceptible at the wrist.

Having made a careful examination of the chest, and finding nothing which contraindicated the propriety of immediate operation, and as the tumour was distinctly increasing in size, and had already reached the level of the clavicle, the author proposed to place a ligature on the artery without further delay,—a proposal which was willingly assented to.

The operation was performed on the 19th November in the usual way, a ligature being applied to the artery immediately to the outer side of the scalenus muscle. The operation was attended with unusual difficulty, from the number and size of the veins which crossed the triangular space,—a difficulty which was fully verified on post-mortem dissection of the parts.

During the first five days succeeding the operation, everything progressed favorably. The pulse averaged from 72 to 88, and his cough was decidedly better. The aneurism had diminished to less than a third of its former size, and I repeatedly pointed out to the students of the hospital this unusually rapid subsidence of the tumour.

On the 24th (fifth day after the operation), the pulse was a little accelerated, and he did not feel quite so well. His cough, however, was better, and he made no special complaint.

On the evening of the 25th, he had an attack of shivering, followed by heat of skin and general fever; and on the 26th he was found to be labouring under acute general bronchitis, with a rapid and feeble pulse and considerable dyspnœa, with slight lividity of the lips. He was occasionally incoherent, his skin was covered with perspiration, and his sunk and anxious look was such that a fatal termination was anticipated.

Under the free use of stimulants and opiates, together with the application of a large blister over the fore part of the chest, his condition improved; and on the 30th his alarming chest symptoms had very much subsided. The ligature was found loose on the dressings on this, the eleventh day following the operation; the wound having been entirely healed for two or three days previously, except at the point where the ligature protruded.

After this, he continued to improve steadily. On the 5th of December he was so well as to be able to be out of bed for half an hour. The wound was healed, with the exception of a point not larger than a pin's head, from which there was scarcely sufficient discharge in twenty-four hours to moisten

the morsel of lint placed over it. The prominence of the tumour was almost entirely effaced, but it wanted the dense feeling of a solidified aneurism.

Early on the morning of 6th December, slight oozing of dark-coloured blood took place from the small opening in the middle of the cicatrix, but soon ceased spontaneously.

On the afternoon of the same day, a small jet of arterial blood again issued from the same point, but the bleeding was arrested by slight pressure.

On the 7th, at three a.m., the bleeding recurred to a slight extent. The cicatrix was now of a dark colour, and stretched by effusion of blood beneath it. Oozing of blood continued through the day in spite of careful compression and the continued application of cold.

At four o'clock on the morning of the 8th, a fit of coughing was suddenly followed by copious hæmorrhage. On arriving at the hospital, the author found the patient in a very weak state, having lost about a pound of blood. He learnt that the whole adhesions of the wound were broken up, and that the hæmorrhage was now restrained by a graduated compress, introduced to the bottom of the wound. The hæmorrhage was in the meantime effectually suppressed. A few strips of adhesive plaster were drawn across the compress, to prevent its being displaced, and a bladder of ice was applied over the parts.

It was now evident that nothing but the application of a ligature to the subclavian, inside the scalenus, or to the innominate artery, could prevent the patient from speedily sinking from hæmorrhage; but the condition of the patient precluded all idea of resorting to such an attempt.

No copious hæmorrhage again occurred. The blood continued, however, to ooze in small quantity through the dressings; and the patient gradually sank, and died at three o'clock on the morning of the 10th December.

The body was examined on the following day. The entire parts concerned in the disease and wound over the clavicle were removed for careful examination.

The parts concerned in the local disease were examined, by first exposing the wall of the cyst, and laying bare the artery upwards from beneath the origin of the large branches in the axilla. The cavity of the sac was then laid open by an incision through its anterior wall, in a line with the course of the artery. On doing this, about an ounce of pus escaped, mixed with one or two small recent coagula; and so little did the interior of the cavity present of the appearance of an aneurismal sac, that the author was impressed with the idea that no aneurism existed, but that an error in diagnosis had been made; that the disease was simply an abscess, which had received a pulsatory movement from its contact with the artery. On reflecting, however, for a moment on the unequivocal nature of the symptoms, and on the speedy and great diminution of the size of the tumour after the application of the ligature, he was satisfied that this could not be the case.

On washing gently the inner surface of the cavity, it was seen that the greater part of its surface presented the loose flocculent appearance of an abscess; that a small portion of the lower border of the first, and the second rib to the extent of between three and four inches, were bare, and at some points rough, from destruction of their lamellated surface, and that a large communication existed in the second intercostal space between the cavity and the abscess within the chest. Here and there the surface of the cavity (especially on its anterior wall) was lined by patches of fibrinous deposit, adherent to the walls of the cyst, and quite similar to the laminæ of fibrin deposited in the interior of the sac of an aneurism.

A probe was now introduced into the divided extremity of the artery

below, and passed upwards with great gentleness till it had reached about an inch beyond the lower limits of the sac, when it at once passed into the cavity of the cyst. The probe was immediately withdrawn, and the opening in the artery was seen to be of an oval form, and about two lines in its longest diameter. The edges of the opening were well defined, but, as well as the arterial coats in its close neighbourhood, were soft, almost pulpy, and very thin.

On passing a longer probe into the artery from below, and avoiding the opening, the coats of the artery were found to be entire for nearly an inch and a half beyond the opening. Here the passage of the probe met with an obstruction, which, however, was overcome without using much force, and the point of the probe, pushed gently forwards, entered the sac near its upper part.

As it was impossible to expose this second opening without further dissection, it was not so carefully examined as the lower opening, in order that an accurate sketch of the parts might be made before they were further displaced. On dissecting the artery further, after the parts had been for some time immersed in spirit, the tissues were found matted together in the walls of the abscess, and it was difficult to ascertain the precise condition of the parts. The artery was obliterated from within an inch and three quarters of the lower opening up to the point of ligature. The coats of the artery for half an inch below the obliterated portion were softened, and the canal of the artery contracted in size. The appearance of the opening in the vessel here was quite different from that of the lower perforation. It was evidently an artificial opening, and made by the probe at the point where its passage had been obstructed; but so slight was the force which had caused the probe to enter the sac, that a perforation had probably existed at this point previously to the performance of the operation, and had been closed by the contraction of the artery, and by the recent effusion of lymph succeeding the application of the ligature.

On examining the wound over the clavicle, after it had been cleared of the coagulum with which it was distended, it was found to have no communication with the aneurismal cavity, being separated from it by the subclavius muscle and costo-clavicular ligament, which remained entire. This had been rendered evident in the early stage of the dissection; had any communication existed, the blood, pent up by the plugging of the wound, must have escaped into the sac, which was not the case.

The artery was found quite disorganised above the seat of ligature. The hemorrhage had occurred from the proximal side of the point at which the ligature had been applied. A firm clot, of about half an inch in length, in great part, but not entirely, filled up the canal of the vessel at this part, and adhered firmly to the walls of the vessel, except on its upper side, where an opening existed, through which a crow-quill might have been easily passed. The nearest branch to the point of ligature was the internal mammary, which was given off about three quarters of an inch from the point at which the artery had been tied. The artery on the distal side of the point of ligature (as already mentioned) was obliterated and already converted into an impervious cord. It adhered intimately to the coverings of the rib, at the point where the ligature had divided the vessel.

Lastly, the veins running over the surface of the tumour and the trunk of the internal jugular vein, showed signs of recent inflammation, the canal of these vessels being partially obstructed by fibrinous deposit and coagula adherent to the walls of the vessel. The veins engaged in the wound over the clavicle did not present any morbid appearance. The subclavian vein

was pervious between the upper margin of the first rib and its junction with the jugular vein, but was completely disorganised and divided at the point opposite the ligature of the artery. This had evidently been produced by the firm plugging of the wound for some days before death, by which the vein had been, along with the artery, forcibly compressed against the rib.

A remarkable variety existed in the position of the subclavian vein. It lay immediately below, and in contact with the artery, and behind the scalenus anticus muscle. It diverged from the artery behind the scalenus to join the internal jugular vein.

The author, in conclusion, states that an attentive consideration of these details can scarcely fail to lead to the conviction that the aneurism was of the variety described by Mr. Liston; that it owed its origin to ulceration of the coats of the artery, which formed part of the walls of an abscess.

—The second case of axillary aneurism occurred to Mr. Barnard Holt. The subclavian was tied with complete success.*

—The subclavian artery has also been successfully ligatured by Mr. Crawford, of the Indian Navy, for a severe gun-shot wound of the shoulder, under circumstances of the greatest difficulty, and which reflect the highest credit on the skill and coolness of the operator. The bones were much shattered, so much so, indeed, that amputation at the joint seemed necessary; but Mr. Crawford decided upon an attempt to save the limb, in which, after great anxiety, he succeeded in doing. It was necessary to remove several fragments, and also to excise a portion of the upper fragment which was removed, after which the limb was placed on splints, and all went on well until an attack of hæmorrhage occurred in the night, which called for ligature of the subclavian, by candle-light, and with a single hospital attendant only as the operator's assistant.†

4. *External Iliac Artery — ligature of.*—In addition to the instance of this operation which appears among our extracts (p. 180), we have to mention two others, one by Mr. Simmons,‡ for femoral aneurism, the other by Mr. Henry Smith, for the same disease. In the latter case, the femoral of the opposite side was subsequently tied for popliteal aneurism.

5. *Nævus.*—Mr. Birkett§ has narrated two cases of large nævus, one of which disappeared spontaneously, the other was removed by the operation of subcutaneous ligature. The various proceedings for the cure of these tumours are given by the author, as follows:

They may be severally arranged under the three following heads:

1. To induce or await atrophy of the new growth, by—
   - *a.* Compression.
   - *b.* Astringents or refrigerants.
   - *c.* Ligature of the vessels of supply.
2. To excite inflammation in the tissue of the nævus, and thus obliterate the cells of the new tissue, by—
   - *a.* Seton.
   - *b.* Acupuncture.
   - *c.* Laceration of the tissue by punctures.
   - *d.* Incision and the insertion of sponge.

* Lancet, Jan. 31, 1852.

† Transactions of the Medical and Physical Society of Bombay, No. x

‡ Medical Times, and Gazette, April 17, May 8th.

§ Guy's Hospital Reports, vol. vii, 1851.

e. Cauterisation with potassa fusa, chloride of zinc, &c.
f. Injections of stimulating solutions.
g. Punctures, with a probe coated with argenti nitras.
h. Vaccination.
i. Punctures, with a lancet's point covered with croton oil.

3. The entire removal of the new growth, by—
a. Excision of the disease only.
b. Amputation of the part affected, as of lips, prepuce, labium pudendi, fingers, &c.
c. Ligature in various ways.
d. Complete destruction with caustics.

In the case related, the author was led to employ the subcutaneous ligature, in consequence of the position of the morbid growth; for to have included the skin, which was perfectly normal, would not only have rendered the operation more formidable, but, by causing extensive destruction of the integuments, would have given rise to a frightful cicatrix, even supposing the healing had been perfect. The plan adopted has not, moreover, in any way interfered with the performance of another operation, should the growth increase to such an extent as to demand further interference.

—Mr. Hilton has removed small nævi with the heated platinum wire advised by Mr. Marshall, for the cure of fistula in ano.*

§ III.—*Injuries and Diseases of the Head and Neck.*

6. *Fractures of the Skull — Statistics, &c., of.* — Dr. Frederick D. Lente† has presented a highly interesting and valuable statistical account of the fractures of the skull, occurring in the New York Hospital during the twelve years elapsing between the 1st of January, 1839, and the 1st of April, 1851.

The table embraces 128 cases, of which 106 were fatal.

"Of the 128 cases, the exact extent of the fracture was ascertained in 95. In 45 of these the fracture involved both calvarium and base.

"In 31 it involved the calvarium alone.

"And in 20 the base alone.

"In 26, or 20·31 per cent., both the brain and its membranes were lacerated; and in 4, the membranes alone. Of these 30 cases, only 3 recovered. In 10 cases there was *hernia cerebri*, only two of which recovered. In 19 cases, or nearly 15 per cent., the fracture of the skull was complicated with other fractures, most of them very serious, and many of them almost sufficient of themselves to produce a fatal result.

"*Fracture of the Base of the Skull.*—In sixteen of the fractures involving the base of the skull alone, the manner of the accident is mentioned. In thirteen it occurred from a fall from a height upon the head. In two, from the fall of a heavy body from a height upon the head; and in one from being beaten over the head with a club. Almost all these fractures, it will be seen, occur from falls upon the head, the base of the skull being thus forcibly impelled against the spinal column, and thus broken, the fracture being doubtless also due, in some measure, to *contre coup*.

"*Separation of the Sutures.*—In *three* cases, there was separation of the

* Lancet. Jan. 31. † New York Journal of Medicine, Jan. 1852.

sutures without any fracture. In *four*, separation of the sutures accompanied by fracture. In all these cases, the anchylosis of the sutures, judging from the condition of those uninjured, was perfect. In *five* out of the seven cases, the injury was occasioned by a fall from a height, striking upon the head; in one from a blow by a passing rail-road car, and in one from a blow with a club. This is a rare form of fracture, and only occurs, according to the authorities, from a very severe injury.

"*Fracture of the Internal Table without Injury of the External.*—In no case was this precise condition of things observed; but in two instances there was a very near approach to it, there being a mere fissure of the external plate, with fracture, attended by considerable depression of the internal. In one of them, the specimen of which is preserved in the pathologica cabinet of the hospital, the fissure of the external table was so very slight as to be undiscoverable upon a first examination of the calvarium after removal.

"In two cases there was fracture of the calvarium by *contre coup*.

"*Condition of the Pupils.*—In all the cases, twelve in number, where the extravasation or depression was confined to one side, and the pupils affected differently, the *dilatation* was on the *same side* with the cause of compression. In none on the opposite side. But, in many cases where this cause was situated exclusively on one side, no particular difference was noticed in the condition of the pupils, they being entirely unaffected, or affected alike. In *twelve* cases, in which the symptoms of *compression* were well marked, the patients not being in immediate danger of death, the pupils were *dilated* in *ten*, contracted in *two*.

"*Paralysis.*—In *eleven* cases in which there was hemiplegia, whether partial or total, rarely the latter, and where the injury was mostly confined to one side or the other, it was found to affect the opposite side in ten, the same side in one.

"*Trephining.*—In forty-five cases in which this operation was resorted to, not distinguishing between the application of the trephine proper and of the various instruments appertaining to a trephining case, *eleven*, or about one fourth, recovered.

"The operation was performed *prophylactically* in ten, of which three were cured; *therapeutically* in thirty-two, of which eight were cured. In three of the latter, the operation was secondary, of which two recovered. In seven of the cases trephined, the fracture was simple. In five cases, incision of the *dura mater* was practised, of which none recovered.

"In no case did death follow the receipt of the injury until after the lapse of some hours, even in the most desperate cases; nor does it appear to be possible for an ordinary blow upon the head, producing fracture of the skull, to cause immediate death. The nearest approach to it I ever saw was just previous to the termination of my term of service in May last; I was called into the yard to see a man in a carriage, who, it was said, had just fallen from the rigging of a ship to the deck, striking upon his head; this was the history obtained from his two shipmates who brought him to the hospital. Upon examination, I found the case hopeless; the man was perfectly dead, and had given no signs of life after the accident; he was not removed from the carriage. I could detect no fracture of the skull, and none of the neck, and yet either might have existed; probably a half hour or hour elapsed between the receipt of the injury and his arrival at the hospital. In a recent criminal trial of great interest, it will be recollected that, at one stage of the proceedings, it was much discussed whether a blow upon the head with an ordinary weapon capable of inflicting death, could produce this result instantaneously; many

eminent surgeons were examined, and the general impression was, that the thing was exceedingly improbable if not impossible, and the question was thus decided."

7. *Foreign Bodies in the Eye Ball.*—Mr. White Cooper* continues his eminently practical papers, (*vide* vol. XIV,) on injuries to the eye, in a paper containing three cases of serious injury from the impaction of foreign bodies. The first case is that of a feeble old man who had a fragment of flint forced behind the iris. After due previous treatment, Mr. Cooper made an incision with Jäger's knife through the upper and outer margin of the cornea, and with the aid of appropriate forceps, was enabled to extract the foreign substance. The eye soon resumed a healthy condition. In the other two cases the sight was lost, and the globe shrunk to half its size.

In commenting on these cases, Mr. Cooper remarks that when a foreign body which has penetrated the eye cannot be extracted, atrophy is a common result. Neuralgia is one of the most distressing symptoms in the first instance, but this subsides; the iris loses its colour, and the pupil adheres to the capsule of the lens, which becomes opaque; the sclerotic becomes thin, and allows the pigment of the choroid to be seen through it. In other cases the eye is speedily destroyed by suppuration.

Mr. Cooper also gives some valuable advice as to the propriety of attempting to restore sight which has been destroyed by accident. There are, he says, two points to be borne in mind,—whether it is practicable, and whether it is desirable to make the attempt. If the eye be generally healthy, and the only impediment to sight is the presence of traumatic cataract, sight may be restored by removing the lens. So also if the pupil is adherent to the capsule, but the globe remains firm, and the retina sound, some benefit may be expected from an operation. But if there be atrophy of the globe, a discoloured and paralysed iris, nothing can be done. Of the expediency of attempting to restore sight in these cases, when the other eye is sound, Mr. Cooper entertains grave doubts. The sight restored is at best imperfect, and the artificial pupil seldom being central, the axes of the eyes do not correspond, and the patient will find his newly restored faculty a nuisance rather than a benefit. The author highly approves of chloroform in ophthalmic operations.

§ IV.—*Diseases of Bones and Joints.*

8. *Spine, Lateral Curvature of.*—Through the politeness of the publisher we have an opportunity of noticing Mr. Tamplin's Essay† on this deformity. The main cause is, in his opinion, general debility, the result, for the most part, of the detrimental system to which young girls are subjected at school; but it may arise also from undue action of one side of the body. His treatment consists in supporting the spine in such a manner that while the superincumbent weight of the head and upper extremities is taken off, the patient is not debarred from exercise. This he accomplishes by the aid of an apparatus, which is correctly figured in the accompanying illustrations.

9. *Bones and Joints, Resection of.*—Some important observations on what he justly and appropriately terms *conservative* surgery by Mr. Fergusson, appear in one of the weekly journals,‡ illustrated by cases of resection of the

* London Journal of Medicine.

† Lateral Curvature of the Spine, its Causes, Nature and Treatment, by W. Tamplin, F.R.C.S.E. London, Churchill, 1852.

‡ Medical Times, and Gazette, Jan. 3, 1852.

elbow joint in one instance, and of the ulna and radius in other cases. We have long deprecated the universal performance of amputation in diseases of the joints of the upper extremity as an indolent and unscientific proceeding;* and it gives us pleasure to find so eminent a surgeon as Mr. Fergusson maintaining the same opinion.

— In an interesting communication on excision of joints, by S. M. Jones,† surgeon to the Jersey Hospital, the arguments in favour of and against the operation are very candidly stated. The opponents of resection in general found their objections upon its presumed greater mortality; this Mr. Jones disposes of, by showing that, in the Parisian Hospitals, more than half the cases of amputation prove fatal.

The difficulty and amount of attention required, is another objection, which, sometimes urged, meets with the reprobation it deserves. "These are cases," the author remarks, "in which the surgeon ought, for a considerable time, to act, as it were, the part of head nurse, so that every change of symptom might at once be attended to."

The cases reported exhibit the author's success in very satisfactory colours; and this we believe is to be attributed to the nature of his after-treatment. "For many years," he says, "I have almost invariably pursued a *stimulating* treatment of capital operations, and without exception in all those performed in consequence of chronic affections." Here, we believe, is the secret of his success, and the wherefore is well shown in a paper already noticed (Art. 39). It is, however, one of the most difficult ideas to expel from the mind of the routine hospital surgeon, that a patient must be starved and lowered after an operation. The author's remarks on this point are so much to the purpose that we transcribe them:

"It will be seen that the stimulating plan was most rigorously followed in the cases I have given the history of; it was commenced immediately after each operation, and steadily pursued for a considerable time. It is not in these cases only that a similar course has been followed; and I cannot otherwise than attribute the great success which has attended the many amputations I have performed, mainly, if not entirely, to its adoption. The dread of producing too great or too sudden a reaction often leads to a mode of treatment which, in my humble judgment, is not only prejudicial to the patient, but opposed to anything like sound reasoning. It is a principle in English surgery to obtain union by the first intention, whenever it is possible to do so; and I know of no means more likely to gain this end than the rousing, if I may so express myself, of the general system. What is the state in which we usually find our patients when they are placed on the operating table? Most of them are emaciated to mere skeletons, the consequence of hectic fever, and the different drains, colliquative sweats, diarrhœa, &c., occasioned, it is true, by a local affection, but at the same time one which influences, in a greater or less degree, every part of the sufferer's frame. Why, then, the dread entertained by many of producing too great a reaction in subjects of this kind? The reasonable cause for fear is, that our first dressing will prove that the powers of the system have been too weak, and that no adhesive inflammation has taken place; and consequently the tedious and wasting process of healing by suppuration is the reward obtained by our milk-and-water treatment. No man will for a moment suppose it to be in what I have termed the mechanical part of surgery that the Parisian operators fail. Few men are to be

* *Vide* Researches and Observations on Scrofulous Diseases, by Lugol. Translated by W. H. Ranking, M.D.

† Medical Times, and Gazette, May 1, et seq.

found who operate as Dupuytren did; and yet it is probable, that in the Hôtel Dieu the number of his unsuccessful cases equalled those of others whose operations were performed in a much less masterly style; but, by all, the after-treatment was conducted on the same principle; and the best operations of one of the first of French Surgeons but too often proved as unfortunate in their results as those performed by men in every way his inferior."

— Resection of the head of the femur is the subject of a communication from Mr. GUTHRIE, in which he describes the operative proceedings with minute detail.*

— The last paper on the subject of excision of joints which we have to notice is one by Mr. HANCOCK,† read before the Medical Society of London. The author, after relating three of his own cases, examined, *seriatim*, the objections usually urged, viz., extreme suppuration, sinuses, constitutional disturbance, shock to the patient, and, lastly, the inutility of the operation as urged by some.

Mr. Hancock alleges that the degree of suppuration does not influence the patient so much as the character of the discharge. A patient with diseased joint, discharging but little, but that little of a morbid and unhealthy character, will suffer from extreme constitutional disturbance. Remove the diseased parts, and let the subsequent discharge be ever so profuse, so long as it is not actually of a morbid character, the constitutional symptoms will subside, and the patient will gradually acquire strength and flesh. This, he says, is accounted for when we consider, that in the one instance there is a morbid action going on in diseased structures, producing unhealthy pus, while in the other the process is one of reparation, giving rise to healthy though profuse suppuration; that sinuses do not form so readily after these operations as has been imagined; and that when they do occur, they are more attributable to bad management and bad dressing, than to the nature of the case. He denies that the shock is greater than that attending an ordinary case of amputation. That with regard to the other objections, Mr. Hancock observes, that the operation of resection is not a useless operation, is proved by the cases just related, as well as those published from time to time by Messrs. Syme, Fergusson, and others; and that it is not unphilosophical, is also amply proved by the fact of its being an operation of preservation, and a substitute for amputation; and that a surgeon is not compelled to remove sound parts. Referring to Mr. Gay's proposal to make incisions into suppurating joints, Mr. Hancock remarked that, if the question at issue rested simply between incising and excising joints, he would not for one instant deny the superiority of the former over the latter proceeding; but in those cases, the selection is between amputation of the limb and excision of the joints, or leaving the patient to die. Mr. Gay limits his method to those cases where the articulations are completely destroyed; and while Mr. Hancock admits that Mr. Gay has done good service in directing attention to this plan, he would observe, that when reduced to this condition, the parts can scarcely be regarded as joints; while in a large proportion of cases requiring amputation or excision, the destruction of parts has not attained this state; that the necessity for such operations does not depend so much upon the extent of destruction as upon the degree of constitutional disturbance attending the progress of such disorganisation; for in many instances the severity of the constitutional symptoms has necessitated amputation where the degree of disorganisation has been comparatively slight, proving that the urgency of cases depends upon the powers of endurance in

* Lancet, May 15.

† Reported in Lancet.

the patient, rather than upon the actual extent of disease or destruction of parts; so that while he readily admitted, that when completely disorganised —when the cartilages were entirely denuded and destroyed—incisions into the joint might prove of avail, he would urge, that in an equal, if not in a more numerous class of cases, the irritation produced by the progressing morbid changes is so excessive, that we cannot depend upon such simple means, but are forced to have recourse to the more decided plan of either amputation or excision.

10. *Wound of the Elbow-joint.*—An instance of extensive incised wound of this joint, with separation of one of the condyles of the humerus, and the articulating head of the radius, was followed by recovery, with partial anchylosis, is recorded by Mr. Butcher.*

11. *Fractures in the Vicinity of the Ankle-joint.*—The paper by the above writer, of which the summary appears among our extracts (Art. 45), is followed by another, in which two additional illustrative cases are given.†

12. *Fracture of the Lower End of the Radius.*—In a paper‡ by Dr. Bond of Philadelphia, the author makes the following valuable observations: —He states that there is no fracture, excepting that of the neck of the thigh bone, in which the treatment is so often abortive as in those of the end of the radius. The usual mode of treating these fractures consists in the use of the long splints, of which the under one extends from the elbow to the tips of the fingers, the upper one only reaching the three metacarpal bones. To this Dr. Bond makes several objections.

"In the first place, it violates what ought to be regarded as a surgical canon in the treatment of fractures, viz., to adopt such a position as will put all the muscles, acting on the part, as much in repose, as free from tension as possible; so that the least counteracting force will be required. 2d. The constrained position of the hand demands tighter bandaging, in order to prevent derangement of the fragments by paralysing or subduing the muscles that are rendered tense by the position assumed. 3d. This constrained position and tight bandaging greatly increase the danger of that protracted or permanent rigidity of the hand and fingers which is a too frequent result of those injuries. 4th. This mode of dressing, by long straight splints, not only increases the danger that it will result in rigidity, but that, when it does occur, the hand will be left unsightly, inconvenient, or useless. 5th. There is another objection to it, which will be regarded by the surgeon as of more or less importance, according as he is actuated more or less by the feelings of humanity, viz., the distress or discomfort which must result from a constrained position and the force applied to maintain it.

"The muscles that act on the hand are least tense, or most in repose, when the hand is inclined backwards, so that the metacarpe forms a considerable angle with the forearm, when it is also inclined inwards towards the ulnar side of the arm, and when the fingers are moderately flexed. In this case it will be perceived that the longitudinal axis of the forearm, if prolonged, would not correspond with that of the hand, but would pass through, or very near, the point, where the thumb and index finger most easily and naturally meet. Thus in the innumerable manipulations with the thumb and fingers (as with a pen, pencil, button, needle, money, &c. &c.), their points most easily and naturally meet in this axis of the forearm. This will be found to be the position of the hand, when it hangs by the side with all the muscles relaxed.

* Dublin Medical Press, Oct. 1, 1851. † Dublin Quarterly Journal, May 1852.
‡ American Journal of Medical Sciences, April 1852.

"This consideration is of little comparative importance in the case of young persons, and of those who have followed no laborious handicraft; but to persons advanced in life, and to those whose muscles and joints have become rigid by hard labour, and to whom the hand is the means of subsistence, it is a point of very material importance. A large portion of these fractures occur among such patients. When such a hand is firmly swathed by a roller upon the long straight palmar splint, it is forced into a constrained position, and some of the muscles, acting on the fragments, are put into extreme tension. This condition of the muscles must act strongly on the fragments of the radius, and must tend strongly to derange them, especially when the fracture is oblique.

"To counteract this tendency to displacement of the fragments on account of the tense condition of the muscles, the bandage with the compresses must be applied so tightly as greatly to increase the risk of that frequent ill success so well described by Dr. Barton.

"When the hand is placed in the position above described, so as to take off tension from all the muscles, there will be so little tendency to displacement of the fragments, that a very gentle pressure of compresses and bandages will be adequate to maintain them in their proper relation to each other. The dressing may be removed earlier, so as to give motion to the hand and fingers, without danger of producing derangement of the fragments, and the gentle pressure of the dressing will be less likely to deprive the tendons and sheaths of their lubricity, and thus to cause permanent adhesions.

"There are cases, as before observed, where such violence is done to the bones and soft parts, especially in elderly persons of a rheumatic or gouty diathesis, that it may be impossible to avoid permanent adhesions and rigidity. In such cases, if the usual authorized mode of treatment be adopted, the result will be a most awkward, unsightly, useless member.

"But if the hand can be placed and retained in the unconstrained natural position above mentioned (to say nothing of the better chance of escaping permanent stiffness), *in the first place*, the unsightly deformity will be avoided; and in the *next place*, the hand will not entirely have lost its uses. For the hand, thumb, and fingers, being placed very nearly in the position of their most frequent uses, the interossei, the lumbricales, and the several short muscles of the thumb, will, by causing only a very limited motion, enable the hand to perform very many of its useful functions."

After alluding to the opinions of Clive, Sir Charles Bell, and others, on this accident, Dr. Bond introduces his own method of treatment. He says:

"I have attempted to devise a mode of dressing these fractures, having reference to the principles advanced in this paper, and that will meet the following indications:

"1. To maintain such an inclination of the hand upon the forearm as shall most effectually relieve the muscles from tension, or put them in repose.

"2. To maintain the hand and fingers in a position that, if rigidity should result, the member shall be as little an incumbrance, and retain as many of its uses, as possible.

"3. To make it easy of application, requiring no extraordinary skill or dexterity, and little liable to be deranged or displaced.

"4. To make the dressing easy and comfortable to the patient, while it does not lack efficiency.

"My own experience of its use, within the last three years, convinces me that I have to some extent accomplished these indications. How far this shall be corroborated by others can be known only when others shall have had time, opportunity, and disposition to test it.

"To enable others to test the principles herein maintained, in the mode of treating these fractures, I offer the following directions for preparing the dressing, with some explanations as to its application:

"1. With a light board, of proper thickness for a splint, take a profile of the well forearm and hand of the patient, placing the hand in its habitual inclination towards the ulnar side of the arm, and extending the profile from the elbow downwards, so that it shall reach the second joint of the fingers on the inside, when these are moderately flexed—as much flexed as they are when the points of the thumb and fingers are brought into contact. The lower end of the board must be cut off obliquely (at an angle of fifteen or eighteen degrees) in a direction corresponding with that of a body grasped in the hand, when the hand is inclined to the ulna, as below indicated.

Fig. 1.

Fig. 1. A board cut to correspond with the profile of the forearm and hand.

Fig. 2.

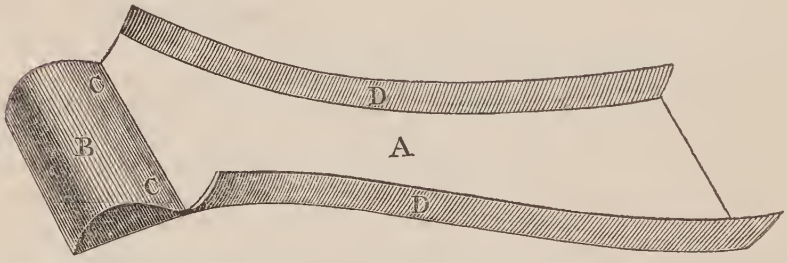


Fig. 2. *A*. This whole space down to the *palmar block* (*B*) to be covered with pasteboard. *C, C*. Parts of the block, which must be more or less cut away, to suit the prominences of the hand. *D, D*. The projecting and elevated edges of the pasteboard.

"2. Cover the board thus prepared with sheeting, or other strong fabric. This may be done by winding around it, from end to end, a narrow rolling bandage, covering all of it as nearly as may be with few or no duplications. This is the most expeditious method. A neater one is to cut a piece of sheeting, of the general form of the board, but extending beyond the board on every side, and fastening it upon the board either by a few stitches, drawing towards each other the overlapping edges, or gluing down those edges upon that side of the board which is to be towards the arm, and which edges are to be covered with the pasteboard.

"3. Prepare a block of soft, light wood, from seven-eighths to eleven-eighths of an inch thick, and from two to two and a half inches wide, according to the size of the patient's hand, and of a length corresponding with the width of the board in the palm of the hand. This block is to be carved and rounded, so as to adapt it to the form of the hand, and make it easy for the thumb, and in the grasp of the hand when it is placed on the board. It is to be fastened there by screws or nails, so that the remote edge of it shall correspond exactly with the lower oblique end of the board.

"4. Upon that part of the board not covered by the palm-block, fasten, by means of small carpet tacks, a piece of book-binder's pasteboard, extending on each side beyond the edges of the board about an inch. If the pasteboard be very thick and stiff, make a slight incision in it along the edge of the board, in order to bend more easily the two projecting portions of it, thereby making a kind of box for the lodgment of the arm. (See fig. 2.)

"It seems to me that this splint, or one constructed on the same principles, will meet the above-mentioned indications in the following manner: *First.* The form given to the board retains the hand in its habitual inclination towards the ulnar edge of the arm, accomplishing the object aimed at by Dupuytren's *attelle cubitale*, with as much certainty, with more simplicity, and more comfort to the patient. *Second.* The palmar block retains the hand in its habitual inclination backwards, and it gives the fingers that moderate flexion which most relieves the muscles from tension, and likewise that position which, if stiffness should result, will not only save the hand from a most inconvenient, ungraceful deformity, but will reserve to it the power of performing very many of its most frequent and useful functions. In addition to these advantages, this block contributes much to the comfort of the patient. *Third.* The object in covering the board with a strong fabric, as above described, is to retain the bandage with certainty in its place, without applying it with a dangerous tightness; for, by fastening the roller to this covering with pins, the surgeon need never have his patience tried by finding his dressing deranged, at his next visit. I can speak with confidence on this point, from having used it repeatedly in cases where this quality was fully tested. *Fourth.* The pasteboard is not an essentially necessary part of the splint, but it will be found to contribute to the comfort of the patient and the convenience of the surgeon.

"The requisites for dressing with this splint are flannel or other soft fabric, to cover or line the inside of the splint; two compresses; a roller; sometimes, but not always, a dorsal splint.

"The flannel or other fabric with which the splint is lined should extend a little beyond the edges of the pasteboard, and the same piece may be extended over the palmar block; but it will be better to cover this block with a separate piece. For this purpose, take a piece of flannel large enough, when it is doubled, to cover the block. Through the doubled edge, with a proper needle, carry a small string (such as ligature-twine), and tie this around the splint immediately above the block. The covering of the block thus applied may be conveniently changed, without removing the arm from its bed.

"Two compresses will generally be required: the anterior or palmar, and the posterior or dorsal. The proper construction and application of the former of these are a most important point in this dressing, and certainly not less so when long, straight splints are employed; and deformity of the radius or wrist will most frequently result from negligence or want of skill in its use. If the compress be deficient in thickness, and the bandage be applied with its usual tightness, there will not fail to be either a curvature forwards, or a sigmoid flexure, which are the usual deformities. If the thickness of this compress be excessive, there may be a curvature backwards, which I think seldom occurs; but there will be such undue pressure by such a compress as to increase the danger of adhesions, and to aggravate the discomfort of the patient.

"I consider this point so important that I shall run the risk of being thought tediously minute.

"It has seemed to me a notable defect in Dr. Barton's mode prescribed for dressing this fracture with straight splints, that he directs the two compresses to be of equal dimensions, and of about the same dimensions in every case.

He says: 'Two compresses, each about two inches square, and composed of strips of bandage about one yard and a half long, evenly folded up, are to be in readiness.' Dr. Barton's very eminent skill would undoubtedly vary from this direction, as each case might require. But we object to this as a rule for those who follow rules implicitly.

"If we apply a long, straight splint to the palmar side of several uninjured forearms, we shall find the space between the splint and that part of the forearm, to which the compress is usually applied, to vary very much, being two or three times as great in some cases as others. This space will depend upon the form of the bones of the forearm (which are sometimes considerably curved backwards), upon its muscularity or emaciation, and upon the greater or less prominence of the heel of the hand. This anterior compress must, therefore, vary in thickness, according to the varying form of the forearm and hand.

"In order to determine with precision the requisite thickness of this compress in any case, place a long, straight splint upon the palmar side of the uninjured forearm of the patient, and make a compress of such thickness as to fill the space, so that the splint applied shall bear as firmly upon the compress as the ends of it do upon the wrist and upper part of the forearm. It is to be observed that, when the hand has its usual inclination backwards, the space between the forearm and splint will be less, and of course require a compress of less thickness than when the hand and forearm are swathed upon a long, straight splint.

"With the splint here presented to the College, it is wholly unnecessary to attach this compress to the forearm by means of a roller. And where there is not such a necessity, it is generally worse than useless to apply a roller directly to the arm before the splint is applied. Some eminent surgeon has said, that the only advantage is, that it impresses bystanders with an idea of the complexity and difficulty of the operation. If excoriation should be threatened, cover the part with soap plaster. Place this anterior compress on the splint, so that its lower edge shall approach very near to the lower end of the upper fragment of the radius, when the forearm is laid upon the compress in the splint.

"These preparations being made, the fragments, if deranged, are to be reduced, and the splint applied. I have very seldom, if ever, found any difficulty in replacing the fragments. Let an assistant, grasping the hand (not the fingers), incline it towards the ulnar side of the arm, according to the direction of Boyer, making steady, but not very vigorous tension, and with his thumbs and fingers the surgeon will easily press the projecting fragments into their proper relation to each other. In making this extension, Dr. Dorsay directs the assistant to 'grasp the hand.' Dr. Barton says an assistant 'makes extension from the fingers.' It seems to me that Dr. Barton errs on this point. The objections are, first, that by grasping and pulling the fingers, the flexor muscles are brought into so much more tension, that they will offer more resistance to the extending force. In the next place, by pulling at the fingers the hand will be brought more nearly into a direct line with the forearm, instead of being inclined towards the ulna, the utility of which inclination in such cases is, I think, so obvious that it would be superfluous to cite authority or to attempt a demonstration.

"After the forearm is laid into the splint, apply the dorsal compress. This compress is seldom essentially necessary in these cases; but it may always be advisable to use it. Its thickness is comparatively unimportant, especially when a dorsal splint is not employed. It may be made of folds of a bandage of about the width of the wrist, and so long as to cover the lower fragment of the radius and the wrist, but not extend upon the hand. After adjusting

this compress, apply a roller, beginning upon the lower fragment of the radius, carrying it down over the wrist, the metacarpus, and the first joints of the fingers, leaving the thumb free; then returning with the bandage to the upper end of the splint, and attaching it in several places by pins to the woven covering of the splint. If the compresses have been properly made and adjusted, it is unnecessary, with this splint, to apply the bandage with anything like the tension ordinarily employed in dressings with the long straight splints; and those accustomed to the use of these splints will be liable to err on this point.

"A dorsal splint is unnecessary, unless the fracture occur so high up that there is danger of diminishing the interosseous space between the bones of the forearm. In such a case, it is necessary. It should be so wide that the bandage will not pass upon the fragments in such a manner as to lessen the interosseous space; and it should be so long as to reach from near the elbow to the hand, but not extend upon the metacarpus.

"It may sometimes be necessary to use longitudinal narrow compresses to prevent the contraction of the interosseous space. But were no roller is applied directly upon the arm, it is probable that these long narrow compresses will not commonly be found necessary.

"Although the preceding observations have had an especial reference to fractures of the lower end of the radius, probably some of the principles advanced and the means proposed to carry them out, may be extended farther. How far they may be applicable to other injuries or diseases of the forearm and hand, I leave to be determined by future observation."

13. *Fracture of the Inferior Anterior Spinous Process of the Ilium.*—This rare, if not unique, form of fracture has been witnessed and recorded by Dr. Ashby,* (U. S.) The case occurred in a negro lad, who while carrying a heavy burden stepped suddenly into a hole. He immediately lost the power over his right leg; but as there was neither distortion nor shortening of the limb, Dr. Ashby declared there was neither fracture nor dislocation; but subsequently, on bending the leg at right angles to the body, and letting it down suddenly, he heard crepitus. This was produced by the above particular movement and no other. On further examination he found a moveable portion of bone in the groin, which proved to be the spinous process of the ilium, probably, he thinks, fractured by the powerful contraction of the recti muscles. The treatment was simple and effectual.

14. *Fracture of the Femur, New Apparatus for.*—In a recent essay,† Dr. Bevan advances some objections to Desault and Liston's splints. He states that as the force is applied obliquely, there is a necessary loss of power; and that it has a tendency to increase the outward rotation of the limb; also that the pressure on the perineum is injurious; that the counter-extension is made by a yielding texture; and that the perineal bandage tends, in fracture of the cervix, to a separation of the fragments. As an improvement upon these splints he submits the following apparatus:—

A single long splint passes under the entire limb, padded at the upper part. One perpendicular bar of iron, well padded, rises from the inner border, and is intended to rest against the ramus of the pubis; while another similar, but longer bar, is placed also perpendicularly on a level with the spine of the ilium, on the outside of the splint. To the lower end of the splint, a moveable perpendicular iron plate is attached by means of a thumb-screw. This plate

* Philadelphia Medical Examiner, March 1852.

† Dublin Quarterly Journal, Feb. 1852.

is perforated in the centre; and through it an endless screw passes, to which a foot board and shoe, well padded, are attached. The perpendicular plate is merely united to the splint by a screw, which can be fixed at various lengths. Counter-extension is made partly by the perpendicular iron pressing against the pubis, and partly by the edge of the splint pressing against the tuber ischii; the danger of galling is much less than may be imagined. The perpendicular iron at the spine of the ilium is of use in supporting the pillows, and fixing one which should always be placed under the trochanter major, to keep it in contact with the neck of the bone, and prevent it from falling backwards. The extension is made by the screw below, which is attached to an iron foot board; and this may either be connected to the foot by a boot or figure of 8 bandage, or, what answers better, by a circular bandage applied round the leg above the malleoli, with a strong band to connect it to the foot-board.

The following is the method of applying the apparatus:—A bandage being applied the entire length of the limb, the patient lies down on the splint, which is previously covered with a long pillow, with the pubis resting against the inner perpendicular (perineal) plate; the extending bandage is applied, the ankle bound to the foot-board, and the screw tightened. Children or unruly persons may sometimes require to be fastened down by a bandage. A pad or pillow should be placed unde the trochanter major.

The advantages of the apparatus are stated to be: 1. Its simplicity. 2. The extension, or counter-extension, is made perpendicularly. 3. No pressure is made on the front of the thigh. 4. The extension may be made very gradually, by means of the screw, without deranging the apparatus. 5. The entire limb is exposed to view. 6. Eversion of the foot is prevented. 7. The extension may be made above the malleoli. 8. The counter-extension is principally made against the tuber ischii.

§ V.—*Injuries and Diseases of the Genito-Urinary System.*

We have in this section to notice three newly published books: Mr Coulson's treatise on the 'Diseases of the Bladder and Prostate Gland,'* and works on Stricture by Mr. Harrison and Mr. Hancock.

15. The fact that the book before us is a *fourth* edition, is the best proof that can be offered that Mr. Coulson's work has obtained the sanction and patronage of the profession. We are not able to refer to the earlier editions, but we have looked through the *present* one carefully, and find it to be a faithful *exposè* of the existing state of knowledge on the subject of bladder diseases; to which the aid arising out of the matured state of chemical inquiry, meets with just appreciation.

The first chapter contains a minute description of the urine in its physiological and pathological conditions. With the first we are not concerned in this Report. One of the most common, as well as important, of the abnormal conditions of the urine, is the presence of albumen. To this the author devotes considerable attention, pointing out the sources of fallacy in its detection, and the pathological interpretation which is to be placed upon its presence, according as it is or is not accompanied with tubular casts, blood discs, or pus globules. Pus, spermatozoa, kiestien, sugar, and oxalate of lime, are other abnormal products noticed. On the latter the author's remarks are

* The Diseases of the Bladder and Prostate Gland. By William Coulson. Fourth Edition. London, Churchill, 1852.

valuable. In common with many recent writers, Mr. Coulson does not take the serious view of the presence of chrystals of oxalate of lime, which Dr. Golding Bird was disposed to do; but acknowledges that they may indicate simply a moderate derangement of the assimilating functions. There are, however, undoubtedly other cases in which a more serious view must be taken. How is the diagnosis to be made? The author gives the following as the chief points to be borne in mind:

"1. The occasional presence of a few chrystals of oxalate of lime is no indication of disease.

"2. The ingestion of aliment containing oxalic acid, is often followed by excretion of oxalate of lime.

"3. The occurrence of a large quantity of oxalate of lime in the urine, if in the preceding day the patient has indulged freely in champagne or ales, is of no moment.

"4. Chrystals of oxalate of lime are exceedingly common in acute rheumatism, or other diseases attended with the excretion of urate of ammonia.

"5. Persons with emphysematous lungs, or in whom, from other causes, imperfect oxidation of the blood is affected, pretty constantly contains the salt in question.

"6. Excluding the above cases, the constant presence of this salt is a valuable sign of disordered digestion, and an important indication for treatment."

The author notices that the oxalate of lime is, in some instances, an indication of the commencement of convalescence, as in anæmic cases, according to Dr. Walsh.

The description of the diseases of the bladder commences with irritability of the organ. This, the author states, arises commonly from some abnormal condition of the urine, and is therefore not an uncommon precursor of an attack of gout. It is at other times the result of a mere nervous excitability of the organ, either idiopathic or symptomatic of disturbance in neighbouring parts. In children the author has frequently known it to be caused by contracted prepuce.

Spasm and paralysis of the bladder are two opposite conditions which form the subjects of chapters 3 and 4; after which the author proceeds to give an account of inflammation of the various tissues of the bladder, of its mucous membrane, its muscular coat, and its peritoneal investment. Of these affections, the symptoms, diagnosis, and treatment, are carefully laid down. The former of these diseases, inflammation of the mucous membrane, is not a common affection unconnected with calculus, but is of serious import, leading, if unchecked, to ulceration and gangrene. Chronic cystitis is better known, and is truly described as a very unmanageable affection. In its treatment, the author places great confidence in injections into the bladder. As internal remedies Uvæ Ursi with Tinctura Ferri Muriatis are advised, or Copaiba, with small doses of Zinc, and Opium once or twice in the day.

Malignant diseases of the bladder are next touched upon by Mr. Coulson in chapter X. The difficulty of diagnosing the disease in its early stages is clearly pointed out, as is also the inability to do more than give partial relief. In this chapter there is likewise an account of a remarkable case of polypoid growth in the bladder, which occurred in the practice of the late Mr. Crosse of Norwich.

Abnormities and injuries of the bladder are next passed in review, when we arrive at chapter XIV, containing the important subject of calculus vesicæ. This the author treats of under the several heads, of the chemistry of urinary concretions, their causes, symptoms, and operations for removal. Of these, the chapter on the causes of stone is an important contribution to our know-

ledge, giving, in a condensed form, the opinions of all the best authorities, though, unfortunately, leaving the subject far from completely elucidated. From the chapters on lithotomy and lithotrity, we extract the following comparison of the two operations taken from Mr. Lee's work on the subject:

"1. Lithotomy is still, in the present state of the art, the operation most suited to the majority of cases of stone in the bladder, inasmuch as one half of the number of stone patients are children, to whom, with few exceptions, it is more particularly adapted.

"2. That as far as adults and elderly persons are concerned, lithotrity is most applicable to an equal, if not to the majority of cases.

"3. Lithotrity is preferable in the great majority of females.

"4. *Cæteris paribus*, lithotrity is more especially suited to small calculi, even when hard.

"5. Lithotrity is less applicable than lithotomy to most cases, where the bladder contains several calculi.

"6. Lithotomy is preferable, and often the only admissible operation in cases of large calculi; as also in those cases where the stone, though of moderate size, is of great density, and irregular on its surface, as in the oxalate of lime variety.

"7. When there is much irritability of the urethra and bladder, which cannot be allayed, lithotomy is preferable.

"8. Lithotrity is applicable in certain states of deranged health, or disease of parts which will contraindicate lithotomy.

"9. Lithotrity exposes more to risk of relapse than lithotomy, (p. 403.)"

The remaining chapters of Mr. Coulson's work, treat of the diseases of the prostate gland, including acute and chronic inflammation, cancer, and prostatic concretions.

16. *Stricture of the Urethra.*—The brochure on the 'Pathology and Treatment of Stricture of the Urethra,' by Mr. Harrison, cannot be said to have in any measure advanced the knowledge of the subject on which it treats, but at the same time it offers a good practical resumé of the present state of surgical science in this department, written in a clear and concise style without the encumbrance of unnecessary verbiage. He divides stricture into two varieties, spasmodic or variable, and organic or permanent, and lays down shortly the pathology and treatment of each. The concluding chapters treat of affections of the prostate, fistula in perineo, affections of the testicle, and morbid irritability of the urethra. The work is accompanied by several well-executed lithograph illustrations of the parts concerned in stricture.

—Mr. Hancock's* small volume is a reprint of the Lettsonian Lectures for 1851-2, which were originally published in the 'Lancet.'

In the first lecture Mr. Hancock, after some brief remarks on the several opinions respecting what is termed spasmodic stricture, enters very fully into an interesting and novel discovery made nearly at the same time by himself and Kölliker, of the muscularity of the urethra throughout its whole course. It is due to Mr. Hancock, however, to state that his observations were made entirely independent of the German anatomist, and were briefly adverted to in the 'Lancet' prior to the publication of Kölliker's description in the 'Cyclopædia of Anatomy and Physiology.' This statement is the more due to him as his name has been inadvertently omitted in the last-named publication. His description of the anatomy of the urethra is as follows:

* On the Anatomy and Physiology of the Male Urethra, with the Pathology of Strictures of that Canal, by Henry Hancock, F.R.C.S., &c. Highley and Co., London.

"The organic muscular fibres in the prostate connected with the urethra, are continuous with those of the muscular coat of the bladder. Their fibres are, however, in the author's opinion, quite distinct from those which surround the various ducts which permeate the gland in all directions, and may in the common ejaculatory ducts be traced into the gland from the vas deferens."

The fibres which surround the urethra are, he says, derived from the muscular coat of the bladder, and form a layer surrounding the prostate portion of the urethra, separated from it merely by elastic tissue. The outer layer of the muscular coat of the bladder then passes forward on the outside of the prostate; and laterally and inferiorly joins the fibres derived from the inner coat in front of the prostate gland, to assist in forming the organic muscular covering of the membranous portion of the urethra. Whilst superiorly, or on the upper surface of the gland, these external longitudinal fibres are arranged in two or more bundles, which are attached, as Mr. Guthrie pointed out in the year 1830, to the pubes near its symphysis. From the front of the prostate the conjoined layer of organic fibres passes forwards to the bulb, investing the membranous portion of the urethra, covered by, but distinct from, the common muscles of the part, the latter being inorganic, voluntary, or striated; these, being organic and nucleated. Arrived, however, at the bulb, these two layers again part company and extend forwards through the whole length of the spongy portion of the urethra, the internal layer running between the corpus spongiosum itself and the urethra, but separated from the latter by areolar tissue; the external lying on the outside of the corpus spongiosum, separating the proper spongy tissue from its fibrous investment. Upon reaching the anterior extremity of the urethra, these two layers again unite, and form a circular body or band of organic muscular fibres, constituting that peculiar structure usually denominated "the lips of the urethra," and which had previously been considered by Mr. Guthrie as surrounded by a peculiar dense structure, analogous to that which forms the edge of the eyelid, and which he believed was requisite to maintain the patency of the opening: so that not only have we the urethra supplied by a coat of organic or involuntary muscular fibre, but the spongy body itself lies between its two layers of involuntary muscle; an arrangement, doubtless, of very great importance in relation to the due performance of the functions of the part. And, as regards the urethra, this arrangement holds good wherever we find the spongy tissue, whether the quantity of that tissue be small or great; for, at the glans, which is formed not only by increased development, but also by a folding back of the corpus spongiosum upon the corpora cavernosa, these muscular layers are multiplied, whilst on the upper surface of the urethra, the same arrangement holds good. Nucleated fibres are also distributed occasionally throughout the spongy tissue.

The chief difference, as it appears, between the observations of our author and Kölliker, is, that although the latter noticed muscular fibres in the prostate, as well as in the membranous portion of the urethra and in the corpus spongiosum, he did not, as Mr. Hancock has done, trace any connection between them. On this latter fact, indeed, the author rests his credit. He remarks:

"Now, I repeat, that I claim the credit of having done what Kölliker has omitted to do—traced these muscular fibres continuously from the inner and outer layers of the muscular coat of the bladder to the distal orifice of the urethra, showing of what the lips of the urethra consist. I have shown that the vesicles and ducts of the prostate gland are surrounded by muscular fibre, those of the ejaculatory ducts being derived from the muscular coats of the vas deferens. I have shown that the spongy portion of the urethra has its muscular membrane or coat equally with the other regions of that canal, and

I have also proved that we cannot correctly regard the whole corpus spongiosum as a highly developed muscular layer, but as consisting of two muscular layers, with an intermediate layer of erectile tissue. The distinction between these layers may readily be seen by the microscope, as well as by injection; and I must confess I do not understand how we are to reconcile Kölliker's theory (which has been adopted without comment by the author of the paper upon the urethra, to which I have already alluded) with the functions of the part. I do not understand how a muscle, however highly developed that muscle may be, can by any possibility perform the functions of the corpus spongiosum. The corpus spongiosum is not merely an urinary apparatus, but a genito-urinary organ; it has not merely to surround and influence the urethra, but to form part of, and that a most important part of the genital organ, and to qualify that organ for the due performance of the sexual functions; and to enable it to fulfil this double office, it requires its conditions of relaxation and erection. I shall hereafter have to notice the influence exerted by the muscular fibres of the urethra over micturition, which is ordinarily performed, or at all events most readily performed, whilst the corpus spongiosum is relaxed. I need scarcely allude to the difference in size between the corpus spongiosum in a state of relaxation and in the opposite condition of erection, when it is enlarged in all directions, not only in length and in depth, but in breadth also; and I would fain ask in what other instance in the body does this obtain?—in what other organ do we find, under any circumstances, healthy muscular fibre, whether organic or inorganic, increasing in bulk in all directions during its period of action? On the contrary, this theory of Kölliker's is opposed to one of the fundamental laws in physiology, regulating muscular contractility, that what a muscle during action gains in breadth it loses in length, and *vice versâ*." (p. 18.)

The practical bearing of these researches, is to render intelligible the hitherto disputed pathology of spasmodic stricture. On this point we will again quote the author's words:

"Spasmodic strictures may now, however, be readily explained: the existence of this muscular layer continuous throughout the canal, offers the most simple and at the same time satisfactory solution of our difficulties, and we have no longer occasion to attribute to sympathies what we can now prove to be muscular contractility. True spasmodic strictures have been ascribed to the spasmodic contraction of the acceleratores urinæ and Guthrie's muscles, whilst the phenomena met with in those situations to which these muscles did not extend, were attributed to sympathy, to sympathetic contraction, or sympathetic irritation, a species of pseudo-contraction; and we frequently found the sympathies as difficult of management as the actual and exciting diseases. We now find, however, that these contractions are not spurious or false, but actual *bonâ fide* muscular action of abnormal character, excited, no doubt, by morbid irritability of some portion of the canal. That these may exist, and probably do exist, coeval with spasmodic contraction of the acceleratores and Guthrie's muscles, I do not deny; but I believe, in opposition to what has been advanced by Sir B. Brodie, that a spasmodic contraction of these organic fibres may take place in the anterior part of the urethral canal, even within an inch from the orifice, and also that it may exist as a primary and independent affection, without a spasmodic stricture necessarily existing at the same time in the membranous portion. These spasmodic contractions frequently accompany organic strictures." (p. 27.)

It has generally been supposed, and has been the dictum of most surgical writers, that spasmodic stricture is limited to the membranous portion of the urethra. Mr. Hancock refuses to adopt this exclusive view, and affirms

that distinct spasmodic contraction may take place within an inch of the meatus.

The second lecture embraces the physiology of micturition, in describing which Mr. Hancock endeavours to disperse the errors which have arisen from the old habit of regarding the bladder as occupied by a single muscle, as well as of considering that the abdominal muscles have a large share in the expulsion of urine. On the contrary, he shows that their influence in this process is very limited, and moreover that their action, as in violent straining, &c., far from assisting in voiding the contents of the bladder, may absolutely tend to keep up the retention of urine in certain cases. This he explains as follows:

"It is a circumstance arising from the anatomy of the part, and one which has not met with that attention from authors which I believe its importance deserves. The urethra is attached to the body and ramus of the pubis by strong and dense fascia, and by the suspensory ligament of the penis, so that it is an error to imagine that it only becomes fixed where it passes through Cowper's ligament. A careful examination shows that an equal length is attached to that which is pendulous, so that if a man has four inches and a half of pendulous urethra, he will have four inches and a half of attached, a point of considerable importance in the manipulation of instruments. The result of this arrangement is, that where the bladder is distended so as to be raised out of the pelvis beyond its usual limits, it forms, with that portion of the urethra behind the suspensory ligament of the pelvis, a species of inverted cone, the apex of which is formed by the membranous portion of the urethra as it lies beneath the sub-pubic ligament. Hence, when the patient strains or makes undue efforts at micturition, the posterior and middle fibres of the levatores ani muscles tend to raise the bladder and tilt it still more forwards; whilst the anterior fibres, drawing up the prostate gland, must compress the membranous portion of the urethra against the unyielding sub-pubic fascia and ligament, and thus obliterate the canal for the time being. Under these circumstances, if we attempt to introduce a catheter, we should always do so with the patient lying on his back, and not in the upright position. And this, moreover, explains how it so frequently occurs in cases of stricture, that the greater the efforts the greater will be the pain and difficulty of micturition and the smaller the stream.

"Ordinary micturition may be considered to be performed by the bladder and urethra combined, not by the bladder alone, or by the urethra alone, but by the two together, assisted, to a certain extent, by the abdominal muscles. From ignorance of the existence of muscular fibre, opposing actions have been ascribed to the bladder and urethra, that of the former being expulsive, that of the latter retentive, or merely passive. The bladder has always been considered a species of reservoir, capable in health of retaining urine, and by its contraction of expelling it when required to do so, whilst the urethra has been looked upon as a kind of passive tube, capable of expansion merely, but exerting no direct influence upon the expulsion of the urine. But these organic muscular fibres point out to us that the urethra is not a tube of this passive character—that it does exert considerable influence over the function of micturition; whilst the connection of these fibres with those of the bladder would suggest combined instead of opposed action of the parts, and tend to controvert existing theories upon the subject." (p. 37.)

The author next shows how the urine is retained in the bladder, and how it is expelled. In doing this he points out the analogy between the functions of the bladder and urethra and other hollow viscera. He believes that the normal or healthy retention of urine in the bladder is partly involuntary,

partly voluntary. That it is maintained or carried out, under ordinary circumstances, by the peculiar arrangement and organic muscles of the part, uninfluenced by any mental control, or where the retention is more urgent and forced, although healthy, then by the assistance of the voluntary or inorganic muscles of the urethra; precisely in the same way that we find the function of respiration, when normal, is carried on without any effort, and imperceptibly to ourselves, by certain arrangements destined for that purpose, whilst in forced respiration we are obliged to call in the aid of other muscles more immediately under the control of our will, to carry out the function of the part. The normal retention of urine may, he continues, be explained in the following manner:

"The bladder, like the uterus and the rectum, requires a certain volume of contents before its efforts at expulsion will be stimulated. Mr. B. Phillips says that the quantity of fluid which that organ ordinarily contains, without inconvenience, is from a pint to a pint and a half, but the correctness of this assertion may reasonably be questioned. Mr. Guthrie has pointed out that the bladder in the healthy state of the viscus, when moderately distended, sinks downwards and backwards on to the rectum, so that the neck or orifice of the bladder being fixed, and incapable of shifting, is higher than the fluid, which cannot consequently escape, were there no other provision to prevent its doing so. And in the next place, where the quantity of urine is greater, I believe that its retention is due to the bladder itself rather than to an especial sphincter muscle or to any peculiar vital elasticity. In order to be more clearly understood, we must bear in mind that the bladder, like the stomach, has its intervals of action and repose, that after expelling its contents its muscular fibres are drawn together. We must also remember the shape of the bladder, its attachment to the prostate gland, and the arrangement and direction of its muscular fibres; some being longitudinal, others oblique, others circular, whilst others, again, are more or less transverse. The shape of the bladder also is peculiar, unlike any other viscus in the body, excepting, perhaps, the gall-bladder. It is triangular, round, ovoid, or pear-shaped, according to the degree of its distension, its sides being drawn together at its neck, like a bottle made of india-rubber. With the exception of the serous, its coats invest it pretty equally on all sides. Its mucous coat lines it, and its muscular surrounds it. But we have seen that these muscular fibres become more aggregated towards the prostate gland, those of the outer layer surrounding the gland, whilst those of the inner become still more drawn together, and pass forwards through the gland surrounding the urethra, to invest that canal in the remainder of its course. Now I believe it is the contraction of this circle of fibres,—which is not, we must recollect, a distinct sphincter, but part and a continuation of the inner coat of the bladder,—acting upon the pad of elastic and non-elastic cellular tissue which surrounds the neck of the bladder, combined with the consent of the other muscular fibres of the bladder to remain quiescent, which retains the urine under ordinary and healthy circumstances. But if, when the desire to micturate is induced, it be not convenient to indulge it, we are then obliged to call the voluntary muscles of the perinæum to our assistance, and thus resist and arrest the natural functions."

The next question, that of the mode in which the urine is expelled, the author likewise resolves by a consideration of the action of other hollow viscera, and more especially the uterus. What takes place in the uterus, he says he believes to be the true explanation of what occurs in the bladder. The fluid contents are compressed and directed towards the neck by the longitudinal fibres; but the fluid being inelastic, the sides of the viscus would

bulge were it not for the assistance of the circular fibres, which furthermore direct the fluid to the urethra. So far then, he observes, from considering these circular fibres as sphincters, they are seen to exert considerable influence in expelling the urine by strengthening the longitudinal fibres and preserving the shape of the bladder.

Mr Hancock's third lecture is on the various forms of retention of urine, and stricture of the urethra. He notices, in the first place, the effect of mental anxiety upon the state of the canal; and details a case in which all the symptoms of spasmodic stricture were so induced. Retention may also arise from a want of harmony between the voluntary and involuntary muscles concerned in micturition. In other cases the author has seen difficulty of micturition apparently depend upon a relaxed condition of the urethra Speaking of organic structures, the author expresses his opinion that the obstruction is formed in two ways; first, by a deposit of false membrane in the free surface of the urethra; secondly, by interstitial thickening of the mucous and sub-mucous membranes. The former view is not one generally admitted, but the author adduces irrefragable evidence of its truth.

It is well known that a permeable stricture may, under some circumstances, become perfectly impermeable, and again resume its former condition. This additional impediment is generally attributed to spasm; the author, however, does not believe that in the thickened and distorted condition of parts, the urethral muscular fibres could act so as to produce complete occlusion. His explanation is as follows:

"These cases mostly occur when, from some cause or other, a more than ordinary quantity of urine has been allowed to accumulate in the bladder before any effort has been made to expel it; so that from the very onset such efforts have been forced and unnatural. Hence we can readily understand that when the urethra has given way, or an operation has been performed, the contraction of the bladder upon the urine is more natural, the reflected action upon the neck of the bladder is diminished, and there is less distension of the urethra behind the stricture, the traction upon which is consequently diminished, and it therefore permits the urine to flow. Very little explanation will suffice to make this point clear to you. In cases of this description, the stricture is a mass of induration of greater or less extent, seated at a given point upon an elastic and extensible canal, which in its normal condition is loosely attached to the structures beneath, but, under existing circumstances, becoming implicated in, and consequently firmly attached to, this mass of induration; so that the stricture is no longer an isolated independent body, but part of this tube, being more or less a fixed point, having the loose extensible tube in front as well as between it and the bladder, but lined by the same membrane, which, whilst loosely attached at other parts, is here intimately blended with, and adherent to, the altered structures beneath. This mass is not merely deposited around the urethra, but as the coagulable lymph becomes effused in the subjacent structures it gradually compresses the membrane of the urethra and pushes it inwards towards the interior of the canal, forming convex projections in that direction, of greater or less extent, with consequent and relative obliteration of the canal. If the urethra in front of the stricture were as solid and fixed as the stricture itself, it is probable that we should not have these cases of complete and unsubduable retention of urine; but, in the existing order of things, as the urethra between the bladder and stricture becomes distended with urine with greater force than ordinary, and the urine enters this part by an orifice of much greater extent than that of the exit afforded by the stricture; and, moreover, as fresh urine is unceasingly pressed forward by the violent efforts at expulsion exerted by the bladder, &c.,

behind; as a matter of course, the urethra behind the stricture must become more or less dilated, and in its dilatation draw upon the urethra in front. Now, if the urethra in front of the stricture were as solid and fixed as the stricture itself, the force exerted by the dilatation of the urethra between it and the bladder, by acting equally in all directions from within outwards, upon the cylindrical tube, would tend to expand the vesical opening of the stricture, and thus favour the passage of urine. And, probably, if the surface of the stricture were uniform and flat, instead of convex, the retention would not be so complete. But as it is, the convexity serves as a fulcrum or pulley to convey the force exerted by the distension of the urethra behind, to the most remote point of consolidation or adhesion in front, producing a kind of double action upon the part. For the sound urethra in front offering no resistance, whilst the vesical orifice of the stricture is dilated by the traction exerted upon it, the same traction draws the anterior portion of the stricture together, approximates the most prominent convexities or projections, and, the greater the force, distension, or pressure exerted behind, the closer and firmer will be this approximation in front. When by any means this pressure is relieved, whether by subduing the vesical efforts by opium, iron, or by operation, or by the urethra giving way, this forced contraction subsides, the parts assume their wonted position, the canal is restored, and hence the urine is allowed to flow. This, I believe, is the correct explanation of those phenomena occurring in permanent strictures of the form under consideration. We can scarcely understand how parts disorganised to the extent that these are can be endowed with such vital contractility as to justify our ascribing such complete retention of urine to irritation or spasm; we may also feel sceptical as to the capability of the delicate muscular fibre of the urethra to resist the powers opposed to it; but when we look upon the case as one of a given force acting upon and resisting itself, our surprise and doubt at once subside." (p. 83.)

Another cause noticed by the author, is obstruction of the strictured portion of the canal by a plug of mucus.

17. *Treatment of Stricture by Dilatation.*—Papers are to be found in the 'Lancet,' by Mr. Wakley and by Mr. Barnard Holt, in favour the one of his "guide and tubes," the other of his "stricture dilator," an instrument which we have figured at p. 173 of the present volume. Mr. Wakley's instrument has been described and illustrated in our last volume, to which we refer.

18. *Operations for Retention of Urine.*—A paper, which led to a very instructive discussion, has lately been read before the Royal Medico-Chirurgical Society, by Mr. Cock, on the operations for retention, and more especially with reference to puncturing the rectum.

The author commenced by alluding to the difficulties which surround the question, as to the best practice in cases of old chronic indurated stricture, recently closed by inflammation and congestion, defying all attempts to pass a catheter; and upon the failure which frequently attends the attempts of the surgeon to relieve such cases by the introduction of sounds, catheters, or bougies. He points out the three modes to which recourse may be had, when the urgency of the symptoms renders some decided interference necessary. First, that of forced catheterism; secondly, that of opening the urethra in the perinæum behind the stricture; thirdly, that of puncture of the bladder. There is nothing new in either of these measures for relieving retention. They may each possess certain advantages, and the circumstances of the case, and the condition in which we may be placed, may incline us to the adoption of

either the one or the other. They have all their drawbacks; but, on the whole, the author is disposed to believe that the bladder may be reached with the smallest amount of pain, with the least risk of present or future danger, and with the greatest prospect of ulterior good, by puncture through the rectum. The first of these operations the author regards as in reality a mode of puncturing the bladder with a blunt instrument, tunnelling through the perinæum under cover of the urethra; and he believes that the stricture is, in the majority of such cases, neither forced nor crushed, but that a new passage is made outside the urethra, which may either re-enter it, or continue its course through the prostate into the bladder. The urgent symptoms may be thus relieved, but the after condition of the patient is not bettered, and it may be rendered even worse. The second operation, that of section of the perinæum, the author thinks is, when dexterously and successfully performed, preferable to forcible catheterism. The urine may be allowed to flow by the new channel, until the urethra has had time to recover itself from the injuries it may have sustained by previous manipulation, or from the irritation caused by the continual pressure of the contents of the bladder. But, unfortunately, the difficulties are often so great, in long-standing disease of the perinæum, that the urethra cannot be reached, and great mischief, or even death, may result from the protracted operation. The author describes the proposed modification of this practice, called "cure of stricture by division," of which the principle consists in uniting the upper and lower permeable portions of the urethra by the division of the intermediate impermeable portion, and thus restoring the integrity of the canal. This, however, he thinks, is very rarely carried out; and that very often death is caused unmistakably from the injuries sustained during the operation. So convinced is the author, by experience and observation, of the difficulty which frequently attends the operation of opening the urethra behind the stricture, where the landmarks which should guide us are obliterated, that he has of late years abandoned the operation of incising the perinæum with a fixed determination to reach the bladder. In those cases where retention and extravasation render it necessary that an outlet should be afforded to the contents of the bladder through the perinæum, he limits himself to making a free incision down to the region where the urethra may be supposed to be situated; and if he cannot then gently introduce a catheter through the wound into the bladder, he does not proceed any further; and he has generally found that the urine has speedily made its way through the wound. With regard to the third mode of relieving the bladder, by puncture, the author brings forward cases to show that puncture by the rectum is safe and simple. Forty cases of operation by the rectum are related. In all of these, the operation was entirely successful, so far as the relief and the absence of any ill consequences from it were concerned. Seven deaths occurred from various causes connected with the previous sufferings of the patients, such as diseased kidneys, inflamed bladder, etc. In many cases the author believes the operation to have materially tended to the restoration of the patient, with a less amount of suffering, and, at the same time, more speedily and effectually, than could have been effected in any other way.*

Several surgeons took part in the discussion. Mr. Arnott spoke, on the whole, favorably of puncturing the rectum, but did not coincide with the author of the paper in his remarks on forced catheterism. Mr. Coulson also approves of puncturing the rectum. Mr. Curling likewise preferred it to forced catheterism; but at the same time expressed surprise at the number

* Lancet, May 1, and Feb. 7, 1852.

of cases in which Mr. Cock found the operation necessary. Mr. Gay added his approval of the operation in a certain class of cases, viz., those in which spasm and inflammation suddenly supervened upon an old stricture. Mr. Hodgson did not regard the operation to be so harmless as was represented. There was danger of wounding the vesiculæ seminales. Mr. Hewett gave his opinion that very few cases of retention from stricture required operation, but thought that by giving opium freely the danger might frequently be obviated.

—We may observe that Mr. Harrison, (op. cit., p. 65,) in alluding to this question, also gives the preference to puncturing the rectum, from its ready performance and the perfect relief afforded.

§ VI.—*Injuries and Diseases of the Integuments and Cellular Tissue.*

19. *Burns and Scalds.*—A report on these injuries, founded on the accumulated evidence of several observers, has been published in the 'Transactions of the Provincial Medical and Surgical Association,' by Mr. Crompton, the value of which can only be justly estimated by a due consideration of the difficulties which unfortunately attend any attempt to gain information from a large number of our profession. These difficulties are partly avowed by the author of the report, in these words:—"The evidence which I have received is of a conflicting character, and it has been a task of great difficulty to arrange my materials in their present imperfect form. I find plans of treatment of the most opposite kind pronounced to be very successful; and, what is still more perplexing, I find the same treatment commended by one person and condemned by another."

This imputation, so just and at the same time so disgraceful to the intelligence of members of a learned profession, arises evidently from the want of discrimination as to the extent and degree of the injury. Until more precision is to be found in this respect, records of treatment will be comparatively useless.

In his classification of burns, Mr. Crompton makes one or two grand divisions: the *local*, in which the injury is trifling, and not sufficient to disturb the general economy; and the *constitutional*, in which more or less severe general disturbance is the result.

These *constitutional* burns vary in the severity of the constitutional symptoms, which symptoms, and not the amount of local injury, except perhaps the *superficial* extent, give the importance to the case. These symptoms are enumerated as weakness and feebleness of pulse, and other symptoms of collapse; irritable stomach and violent shivering is one of the most striking of these symptoms, and is looked upon by Mr. Crompton as the best index of the constitutional complication. In proportion to the severity of the shivering and its frequency is, according to Dr. Kentish, the severity of the case and its consequent danger. The importance of attention to the constitutional symptoms is well shown in the statistics of the causes of death from burns which the author gives.

After some few remarks on the theory of the action of most external applications in burns,—which is, that they act as mere non-conductors of heat, and not, as is commonly supposed, by excluding atmospheric air,—Mr. Crompton proceeds to analyse the replies to his questions sent to the Association at large.

The first is, whether stimulants, as turpentine, &c., are useful in burns and scalds, and, if so, in what cases and used in what manner? The evidence given in reply to this question is most conflicting. There appears, however, says Mr. Crompton, a growing doubt whether it merits the eulogium bestowed upon it by Dr. Kentish. In St. Bartholomew's Hospital it is replaced by cotton; in Manchester by flour. It is still, however, highly thought of by many. How is the discrepancy to be reconciled? Mr. Crompton says, because it is not generally employed as was recommended by Kentish, which he proceeds to verify by quotations from that author and from Cooper's 'Surgical Dictionary,' a main part of his treatment, namely, the exhibition of opium in large doses, being omitted. On the whole, Mr. Crompton decides that the evidence given him preponderates on the side of stimulants, both in large and small burns.

The next question is as to the value of cold applications. On this point, the universal opinion seems to be that they are improper in burns of large extent, and that they are of doubtful use even in small injuries.

The application of nitrate of silver to burns is recommended by Mr. Higginbottom, but no other person affords evidence respecting it.

The value of flour and cotton is next considered. Respecting the former, the evidence is most conclusive as to its value, in burns of all degrees of severity; cotton is also highly lauded, but appears to be slightly inferior to flour.

Treacle is recommended as an external application by Mr. Jesse Leach and Mr. Bulley. The latter informs us that its action is *directly sedative*, and that it lulls the pains and moderates the inflammation. It also appears to act as a disinfectant. The treacle is also used by Mr. Robinson and Mr. Snape, of Bolton. Mr. Crompton suggests that, after the application of treacle, flour should be dusted on.

The application of lotions, of which water forms a large part, is the main treatment employed by the practitioners of St. Helens, where these accidents are frequent.

On the prognosis of burns some valuable information is afforded in Mr. Crompton's report. The fatality seems to be more dependent on extent of injury than depth, especially when the trunk is involved.

The internal treatment of burns, like the external, is the subject of considerable difference of opinion, especially with respect to opium; the balance of opinion is, however, in its favour in *large* doses.

This report contains much further important information, which our diminishing space obliges us to pass over; but we will not conclude without congratulating the Provincial Association on having been the means of eliciting so valuable a contribution to surgical science.

20. *Carbuncle.*—Two cases are reported in the 'Provincial Medical and Surgical Journal,'* illustrative of the association of carbuncle and saccharine urine. In all cases the sugar was observed to diminish as the patient became convalescent, and disappeared altogether on the recovery. There was not any great diuresis, as in diabetes, the urine never exceeding four and a half pints. We have several times noticed the same association.

21. *Chronic Abscess—Iodine Injections in.*—The foreign correspondent of the 'Medical Times' observes that one of the most striking contrasts between the London and Parisian practice of the present day is presented in the treatment of abscesses of a chronic nature, as they are observed to occur in per-

* April 14, 1852.

sons of a strumous disposition. While English surgeons, for the most part, place their chief reliance in constitutional measures, and adopt but little active local treatment, Paris surgeons, on the contrary, depend almost exclusively on the employment of a local remedy, possessing such active and energetic properties as to create not only astonishment, but alarm for the safety of the patient in the minds of those who for the first time witness its use. The injection of iodine into the cavity of synovial membranes was some years ago suggested and adopted by M. Bonnet in serous and purulent effusions of the joints. The same remedy was afterwards recommended as a treatment of chronic abscesses, especially those connected with a strumous taint, and depending on diseased bone, and is now almost universally relied on at the different hospitals of Paris as a safe and effectual mode of producing the obliteration of these chronic suppurating cavities, which frequently prove so obstinate under the influence of other measures. Cases have even been recently recorded in which a solution, consisting of 20 parts of tincture of iodine, 4 parts of iodide of potassium, and 100 parts of water, was injected into the peritoneal cavity in ascitic dropsy that had resisted other treatment, and was followed by the most successful and encouraging results. With chronic abscesses constitutional disturbances are seldom observed to arise from their injection, although such practice is now of almost every-day occurrence in Parisian practice. The method of proceeding is precisely the same as that adopted for the radical cure of hydrocele; and, in fact, Paris surgeons think no more of injecting the suppurating cavity of a large lumbar abscess with a solution of iodine, than London surgeons do of injecting the same solution into the tunica vaginalis in cases of serous effusion into this cavity, or hydrocele.

The following report, as illustrative of this subject, is taken from a patient in the Hôtel Dieu, under the care of M. Roux, a sound and cautious practitioner; but it is not difficult to meet with many such cases at the other hospitals of Paris; indeed, in the clinique of M. Velpeau, at La Charité, there are at the present moment two patients, one affected with a lumbar, and the other a gluteal abscess, which are being treated with iodine injections; and, a short time since, we observed a case, in the service of M. Nelaton at the Hôpital Clinique de la Faculté, of a strumous glandular abscess of the neck, treated with an injection of a small quantity of tincture of iodine every day; it created a little momentary smarting pain, but no constitutional disturbance, and the patient has since left the hospital cured.

Emile Marliane, aged 31, admitted into the Hôtel Dieu, under the care of M. Roux, January 26th, 1852. Is by profession a hairdresser, and presents a spare and decidedly strumous appearance. About four months previous to his admission, he was affected with pain and weakness in the loins, and pains shooting down the legs, accompanied with shiverings, and much febrile disturbance, all of which he attributed to a cold, from working in a damp room. A swelling soon afterwards appeared in the lumbar region, on the right side, and gradually increased in dimensions until his entrance into the hospital, when he presented a large fluctuating swelling, occupying the whole right side of the lumbar region, and extending into the gluteal region nearly as low as the trochanter major of the os femoris. This swelling was tapped with a trocar and canula, and about thirty ounces of a strawberry-coloured, flaky, purulent fluid withdrawn. Several ounces of a solution, consisting of the compound tincture of iodine and water, in the proportions ordinarily used for the injection of hydrocele, were injected through the canula into the cavity of the abscess. It immediately occasioned a considerable burning, smarting pain, and, after being allowed to remain for five minutes, it was again withdrawn through the canula, and the patient was soon almost free from pain.

No constitutional disturbance followed the employment of this measure, but fluid began gradually to re-appear in the abscess, the boundary of which, however, was much diminished in extent. About ten days afterwards it was again tapped, and reinjected with the iodine solution, and the same process has been repeated twice since, with the effect of each time considerably diminishing the extent of the abscess. The last injection was employed on the 1st of March, and on the 12th of March about an ounce of fluid only having collected, and being situated quite superficially, the abscess was laid open by means of caustic potash, and thus converted into an open sore, which is now (March 17th) about the size of a half-crown piece, presenting a perfectly healthy appearance, and in progress of healing rapidly. The patient indeed may be looked upon as quite convalescent.

The above case has been unquestionably of a somewhat tedious nature, and more so than the generality that are submitted to the same treatment; but it was also a case of a very severe and extensive nature. Since our attention was attracted to it, another patient was admitted into the same ward, (March 2d, 1852,) similarly affected with an abscess in the right lumbar region. It had been forming about two months, and did not extend beyond the loins. The day after his admission he was submitted to precisely the same treatment as the former patient. A small quantity of fluid collected after the injection, but this has since been almost completely re-absorbed, and the patient will in all probability leave the hospital in the course of a few days, perfectly and rapidly cured after one single injection.

According to some observations recently published of M. Bonnet, iodine is very freely absorbed into the system from suppurating cavities, and also when used as an external application to suppurating wounds. It may afterwards be readily detected in the urine by the ordinary tests, starch and chlorine, or nitric acid, and it thus is not only to be considered as a local agent in these applications, but also as a constitutional remedy of considerable importance in meliorating the strumous disposition so frequently encountered in association with these cases.*

21. *Warty Ulcers of Cicatrices.* — We take the present opportunity of affording some additional information on the subject, recently communicated by Mr. Reid of Canterbury. He states that the affection appears to exhibit two principal forms: — The *first* characterised by the development of one or more warty tumours, which increase and spread by the addition of similar growths formed in the neighbourhood. This form was first described by Mr. Hawkins, and he admits that it may be cancerous or malignant in the lowest degree. The *second* presenting an ulceration having either a coarsely-granulated, or fibrous aspect, and spreading by the development of a new structure in surrounding integument; this is particularly described by Mr. Smith, and he assigns to it a low degree of malignancy.

The following characters of the affection is laid down by Mr. Reid:—There appears in some part of a cicatrix a wart, or a small hard tumour, which either resembles a wart, or has a smooth surface. It at once undergoes certain changes, or remains inactive for a variable period. When the tumour increases, fresh growths spring up around, and coalesce with it, creating sometimes in this manner an elevated mass, of considerable size; the surface becomes moist, and partly ulcerated, yielding a thin offensive discharge; it is often very vascular, and bleeds when touched. In the progress of the

* Medical Times, and Gazette, March 27, 1852.

disease several changes are noticed in the tumour; it may either become more consolidated, so as to lose, in some measure, its warty appearance, and resemble a fungous growth, (warty growths, however, being generally noticed near it, and its fibrous or striated structure being generally readily discovered by the use of a probe, or upon making a section of it); or it may degenerate by ulceration or sloughing to a greater or less extent, so as sometimes to leave a deep excavated ulcer; the thickened, warty, or peculiar state of the surrounding skin remaining, and the disease extending by the same process of contamination of adjacent parts. In other examples, ulcerated spots present themselves on the cicatrix, and gradually coalesce; the surface of the ulcer is then either covered with closely-arranged fibres, of a whitish yellow colour, having a dense, but at the same time brittle texture, and rising above the level of the integuments; or it is formed of coarse, firm, round granulations, resembling the elevations of a cancerous ulcer. Upon a close examination, these granulations are found to have a fibrous texture, the intervals between them are well-marked fissures, to the bottom of which a common probe can be readily passed. The progress of the ulcer is sure, and slowly advances in spite of remedies. It enlarges by an alteration of the surrounding tissue. The integument becomes raised, thickened, and fissured or warty; and then softens or ulcerates. After it has continued some time, although commonly confined to the skin, and frequently limited to the extent of the cicatrix, it spreads in depth by involving subjacent tissue; and if the disease is situated over a superficial bone, invades the periosteum, and even the bone itself, so that a fracture may result from the destruction. Mr. Smith cites instances of this. A sloughing process not unfrequently attacks and destroys the entire surface; the surface clears, and again assumes its special aspect. This does not appear to occur so often in the fibrous variety of the ulcer. The pain is at first slight, but gradually becomes more severe and constant. The discharge is thin, semi-purulent, and frequently very offensive. In the more advanced stages of the disease hectic fever sometimes appears. The absorbent glands connected with the part are not generally affected, though they are frequently sympathetically enlarged; however, in two instances described by Mr. Smith, they exhibited the appearances which mark cancerous disease. General or local treatment of the ordinary kind has no effect upon the disease; its progress is inevitable, unless the diseased part is completely removed, when it rarely appears again. It has, however, been known to return in a distant part, and also to become developed in other parts of the system.

In the foregoing description, the author remarks on the analogy of this disease with that form of cancer designated epithelial; indeed so similar do the two affections appear, that he thinks there is no reason why they should not be included in the same category, and considered as identical. The mode in which the disease commences, the history of its progress, the manner in which it invades and spreads in subjacent and surrounding texture, affects the lymphatic glands, and penetrates bone, correspond entirely with what is observed in cutaneous cancer. The various forms agree; the warty tumour, the warty ulcer, and the granulating ulcer, with hard, elevated, everted, and sinuous margin, are found in each affection; the very character of the pain and of the discharge is alike in both. And, further, the reasons that have been assigned for considering it cancerous disease, possessing a low degree of malignancy, are the same as those upon which epithelial cancer is admitted into the order of malignant disease,—namely, its capability of converting neighbouring tissue into a similarly new structure, though its progress in doing so is slow; its power of contaminating the lymphatic glands, while the period it exists without affecting the system is long; its return after complete removal,—this occurrence, however, being rare.

It will, therefore, be bettter to regard this disease, which has been considered as almost peculiar to cicatrices, as *epithelial cancer of cicatrix.* Why the tissue of cicatrix is liable to this form of cancer may probably be part of the same question which involves the explanation of the more frequent appearance of the same disease in the scrotum, the labia pudendi, the lip, and integuments of the face, than elsewhere.*

22. *Cancerous Degeneration of Warty Excrescences.*—Mr. Butcher details cases which seem to prove that there are some apparently insignificant warty tumours, which are occasionally seen to put on a malignant aspect. The inference he draws, is that such excrescences should be early excised.†

§ VII.—*Operative Surgery.*

23. *Causes of Mortality after Amputation for Disease.*—The paper on this subject, by Mr. James, of Exeter,‡ is a continuation of an essay, the first part of which we noticed in a former volume, (XIII, p. 289.) The diseases which form the subject of inquiry are, affections of joints, necrosis, malignant diseases, ulcers, sphacelus, useless limbs, &c. Contrary to what might have been supposed, it is clearly ascertained, that the mortality in operations after diseases, is greatly less than after injuries. The deductions drawn by the author himself are to the following effect:

1. That amputation, especially of the upper extremities, is an operation, *per se*, little fatal when well performed, when the case is carefully attended to, when no after hæmorrhage or other important contingency affects the result; but that injury or disease will cause a material difference, if they have affected the general system prior to the operation, and in proportion to the degree and mode in which they have done so.

2. That grave injuries do this at the time of their infliction, and independently of subsequent inflammatory action; although, when this arises, it increases it in a greater or less degree, according to the character of that inflammation, and the treatment adopted. They rank first in order in regard to mortality.

3. That diseases of a particular class, for example, those which may have recently contaminated the constitution, as acute gangrene (not arising from external injury), or acute suppuration, and old existing ulcers, will also be the cause of a large share of mortality.

4. In other cases of disease, although very severe in themselves, and complicated with such affections of other organs as may eventually cause the death of the patient, yet the system not being similarly contaminated, amputation is much less fatal.

24. *Cancer, on Operations for.*—The question of the propriety of removing a given specimen of cancerous growth, is one of the most anxious which comes before the surgeon, and is one, moreover, in which there is a great discrepancy of opinion even among high authorities, some advising that a tumour should be removed under circumstances which others will consider unwarrantable. For this reason we lay before our readers the well-digested opinion of a surgeon well known as an able pathologist as well as skilful operator.

* Provincial Medical and Surgical Journal, Feb. 4, 1852.

† Dublin Medical Press.

‡ Transactions of the Provincial Medical and Surgical Association, vol. x.

Mr. Simon* observes that the chances of success varies with two considerations, viz., 1, accordiug to the hold the disease has attained locally; 2, according to the amount of constitutional taint. On the first point he observes:

"It may be considered a rule without exception, that an operation for cancer should not be undertaken except when there is every presumption that *a complete local recovery* will ensue—that the wound will advance healthily to a sound cicatrisation. This presumption can be entertained only when the surgeon is quite confident of getting beyond the local limits of the growth. Nothing can justify cutting through lymphatic or venous cords, or cellular tissue, in which are the germs of the disease. In such cases, the track of the knife converts itself without delay into a cancerous sore. Under these circumstances the disease is said to 'return in the wound.' This is a quibble. The disease does not return, for it never was away. It simply continues in those textures from which the operator failed to remove it. To set about amputating a breast where the integuments are infiltrated and brawny; or exposing the surface of an encephaloid tumour (for instance, in the neck or groin,) with uncertainty as to whether its deeper attachments may permit an entire removal; or cutting at the circumference of a cutaneous cancer with indistinct and indefinite limits,—would illustrate the *mala praxis* which this rule condemns. In all such cases of injudicious interference, the patient's condition is aggravated; his sufferings from the disease are needlessly increased, and the fatal result is accelerated.

"Almost equally without exception is the rule, only to operate when one may reasonably believe that there are *no secondary deposits* (however small) in the lymph-glands or elsewhere; for, at whatever rate of increase the original disease was advancing, at just the same pace (since its origin is constitutional) will it continue in the secondary form. The cachexia simply transfers its manifestations of activity from the former site to the latter."

The second point is, he remarks, more difficult to determine, and must be done by measuring, as far as possible, the *degree* of cancerous cachexia present in any case. This is done by taking the following points into consideration:

1. The highest importance must be attached to the *rate of increase.* Sometimes this is so rapid that the disease might almost be termed an acute one. Such is especially apt to be the case with the encephaloid variety of cancer, which therefore attests an extreme degree of the fatal diathesis. Often, in these cases, a sensible progress is made from day to day. It is not, however, only with encephaloid tumours that we witness this sudden growth. Last autumn the author saw a lady suffering with disease of the mamma, and found her in the following state;—From the sternum to the scapula, over the whole left side of the chest, the integuments were quite hard; the breast itself was like marble, large and prominent, with the skin red and shining; there were scattered subcutaneous tubercles; the glands above the clavicle were large and hard; the axilla was stuffed with deposit; the entire arm tense with œdema. The opposite side showed the small shrivelled breast of a spare woman of sixty. Now that disease was the work of *five weeks.* In about three more she was dead.

It must be obvious, the author observes, that no surgical operation can ever be advantageous where the disease is developing itself rapidly. Such a proceeding would be almost as though, at the commencement of rheumatic fever, one were to amputate the first limb in which synovial inflammation had arisen.

Speaking generally, Mr. Simon states, that the chance of doing good by the

* Lancet, May 15, 22, 29, &c.

removal of a cancerous tumour, as compared with others of the same species, will be in inverse proportion to the rate at which the tumour has grown; that this rate measures the characteristic diathesis, and consequently indicates how soon and how certainly we may anticipate the patient's relapse into a condition of irremediable disease.

2. The amount of *inherited liability* to cancer, which the patient may be supposed to possess, is an important element in this prognosis. Cancer is supposed to be inherited in about a seventh part of the cases where it occurs. The author relates a marked case in illustration of this point; he operated on a lady, several of whose relations had suffered from cancer, although in other respects a favorable case, it speedily relapsed.

3. A third point to be taken into consideration is the *form of cancer*, in relation to its kind and site. Some forms invariably recur. Such, according to Mr. Simon, are encephaloid of the globe of the eye, and of the testis in young children. He doubts if a single successful case of extirpation of this form is on record.

Respecting the removal of cancerous breasts, statistics are wanting, but Mr. Simon doubts whether the return of the disease is not more certain than is commonly supposed. He thinks that many so called successful removals of cancerous breast, have been instances of incorrect diagnosis; sero-cystic disease of the mamma, or chronic mammary tumour, having been mistaken for it.

The final unsuccess of operations is still more certain in malignant disease of bone and of the testis, and indeed in all diseases in which the cancerous matter develops itself by infiltration into the substance of organs.

The form of cancer which the author, in common with most surgeons, operates upon least unwillingly, is the *epithelial* cancer, as it affects the tegumentary tissues, provided always the glands be uncontaminated. This form of cancer is described as consisting of elements undistinguishable from the normal scales of skin or mucous membrane; but the arrangement of these elements is not normal. It is described by Mr. Simon as follows:

"When we press parts of the tumour, there start from the section here and there, minute vermiform particles, of cheesy consistence, which we may detach with the point of a needle, tear into still smaller fragments, and examine under the microscope. The appearance there is very characteristic; we might fancy we were looking at some lightly-drawn diagram of a multi-central fibrous tumour, such as we know in the uterus. We seem to see an external fibrous tissue in parallel turns, binding together smaller spheroids of various sizes, each with its own concentric arrangement. These primary spheroids look like the simple wisping of hay with which we would begin to imitate a bird's nest, and are held close, in rounded clusters (two, three, or more together,) by a similar wisp environing them. On careful examination, we find that the appearance of fibres is fallacious; it is due to epithelial scales, attenuated so as to stimulate fibres, and woven closely together in the manner I have described. It seems a concentric arrangement of these scales around some material different from themselves, for the inward substance is more transparent; and I have often been led to speculate, though hitherto without being able to satisfy myself, whether the centres of this peculiar hypertrophy are the specific germs of the malignant disease."

Mr. Simon proceeds to describe the mode of origin of this form of disease, as well as its predilection for orifices of the body, to irritation of which it is generally attributed. As regards removal, he states that he would in this form undertake operations of greater magnitude than in any other, provided there are no secondary deposits; but he further observes, that epithelial cancers offer no

exception to the rule of refraining to operate whenever these deposits do exist. On the contrary, he believes that in this form of disease, the contaminated lymph glands generally carry on the morbid process more actively than the cutaneous surface.

After these remarks Mr. Simon gives a brief recapitulation of the subject:

"I have now stated the general principles which chiefly guide me in determining the admissibility of cancer-extirpations, and which, as we shall have observed, resolve themselves into a full recognition of the constitutional origin of the disease, and an endeavour to determine, from the circumstances of the particular case, whether that constitutional influence be vigorous or feeble. It seems scarcely requisite to add, that careful regard must be had (as in every question of surgical operation) to the general condition of the patient's health, and that we should refrain from attempting any considerable mutilation for a person either very far advanced in years, or exhausted in constitution, or affected with other serious disease. In a case, to which I have already adverted, of desquamating cancerous ulcer on the shin, it will be remembered that I refrained from operating. The patient was seventy-one years old, and far from strong; the disease could have been effectually removed only by amputation of the leg; and I thought this operation quite inadmissible under her circumstances of age and health.

"Extreme pain and proximate risk to life are the conditions of a positive kind which, most of all, warrant an operation. They would of course be strong reasons for advocating such a measure in cases otherwise favorable—in cases, for instance, where a growth, either very gradual or of the desquamating kind, had been attended by no secondary formations, by no tuberculisation of skin, by no impairment of health; and within certain limits they would sometimes lead us to operate under less favorable circumstances. I have already, in the course of my lecture, adverted to one or two possibilities of this kind. But, on the whole, I think them rare; and, so far as my own experience and observation have gone, I find few instances of cancer (barring those of the desquamative kind) in which I can confidently promise my patient that an operation will relieve him from suffering, or will improve his chances of life. In all other than the desquamative form of cancer, I am therefore strongly inclined to look upon severe surgical operations as measures only for exceptional adoption.

"With respect to the age of a cancerous growth at which it is most desirable to operate, we have not sufficient materials for perfect judgment. There is a strong popular impression in favour of early extirpations, but I must say that this impression seems to me to have been hastily formed, and that it cannot be received without qualification. In the epithelial form of the disease, indeed, I do think it desirable to operate so soon as I am satisfied as to the nature of the growth, partly because of the greater degree in which it may be considered a local disease, partly because of the marked difference in its course which is made by any contamination of the lymphatics—an evil which delay would render more probable; but in the other sorts of cancer I am by no means equally persuaded of the advantages generally ascribed to early operations. It would require very copious statistics, which we do not yet possess, to speak with certainty on the point. I will only venture to say that I entertain grave doubts as to the practical expediency of extirpating solid cancerous tumours in early stages of their progress, and that some of the quickest and most fatal relapses which I have witnessed have been in cases thus operated on. My impression, both from pathology and practice, is rather that, for a majority of cases, one might best economise the life of one's

patient by deferring the operation till special circumstances (extreme pain or impending ulceration) should make it imperative: thus sufferiug the constitutional disease to exhaust itself as far as possible in the organ which one meditates removing. The peculiarities of each individual case may justify differences of practice in this respect, and the contrarieties of opinion which now prevail may be reconciled as knowledge increases, for it is a branch of the subject in which our profession hitherto possesses but imperfect materials for judgment."

§ VIII.—*Syphilis.*

The subject of syphilis has been so fully reported on in a former volume, that it will not be necessary, on the present occasion, to do more than allude to the most recent communications.

A very important and useful contribution to the literature of syphilitic disease by Mr. Erasmus Wilson, is the latest monograph which has appeared on the subject. The intention of the work, as we gather from the preface, is to define and distinguish, more accurately than had previously been done, the syphilitic eruptions of the skin from those of simple origin. One of the first results of this investigation the author informs us, "is the discovery that there is but one syphilitic eruption, and that the apparent differences in the character of the cutaneous affection, are the simple consequences of modification in the development of that eruption, depending on time, treatment, and temperament of the patient."

Another result of the author's inquiries is, that there is but one syphilitic poison, which may show itself in an ulcer, or in gonorrhœa, and that the latter is as certainly followed by secondary symptoms as the former.

The induration of the Hunterian chancre is also further believed to be the result of constitutional action, and the evidence of systemic contamination.

On the subject of constitutional syphilis, the author holds opinions in many respects at variance with generally received doctrines. He believes that once admitted it is rarely eradicated, and that it will show itself even after successive generations. Scrofula is regarded as syphilitic, so is phthisis, lupus, lepra, and psoriasis. Lastly, the author holds, in its fullest extent, the communicability of the constitutional disease through the medium of the secretions.

In giving a rapid analysis of the volume, we may state that Chapter I gives a description of the modes in which the disease is transmitted, and in which the author insists strongly on the communicability of the constitutional disease, and illustrates the fact by several cases.

Chapter II gives a brief account of the primary manifestations of the disease. Chapter III, of the secondary or constitutional; after which, in Chapter IV, the author proceeds to the classification of the syphilo-dermata or various forms of evolution of the syphilitic poison by the skin, all of which he regards as an attempt, on the part of nature, to eliminate the poison from the blood. The first of these mentioned is simple congestion, forming syphilitic roseola, which is further subdivided into R.versicolor, orbicularis, annulata, punctata, and papulata. The latter is the link between the non-elevated and elevated eruptions.

The next degree is *lichen*, which has five varieties—corymbosus, disseminatus, confertus, annulatus, and pustulosus.

* On Syphilis, Constitutional and Hereditary, and on Syphilitic Eruptions. By Erasmus Wilson, F.R.S. London, Churchill, 1852.

The third degree is the syphilitic *tubercle*, which the author also divides into five groups—corymbosa, circumscripta, disseminata, annulata, and ulcerantia. All these varieties are minutely described and illustrated by three admirably executed coloured lithographs.

Chapter V is occupied with some other syphilitic phenomena not previously mentioned, such as alopecia, erythema palmare, condylomata; also its local actions on mucous membranes in the nervous system and in the periosteum.

Chapters VI and VII, congenital syphilis. In this chapter the author develops his peculiar views respecting the identity of scrofula and syphilis, as well as of the syphilitic origin of lupus, &c.

We now come to the treatment of syphilis, which occupies the eighth and concluding chapter. The author first speaks of the *prophylactic* treatment; which consists chiefly in rigid attention to cleanliness after intercourse. If excoriation occurs, he advises slight cauterisation, with argentum nitras. The *abortive* treatment is next considered. As soon as any indication of chancre appears, the author advises cauterisation at once, with potassa fusa, or potassa c. cretæ. Nitrate of silver he considers to be perfectly inefficient.

The *curative* treatment is made to consist in two indications: 1, to prevent the increase of the poisonous ferment in the blood; 2, to ensure its removal by the natural emunctories.

The first indication is fulfilled chiefly by hygienic measures, as diet, exercise, bathing, &c.; the second by certain medicinal agents. Of these the principal is mercury. The preparation of this drug preferred by the author is blue pill, in doses from two to five grains, combined with a sedative. In addition to this, sudorifics are valuable adjuncts. "In a word," observes the author, "the treatment of primary syphilis consists in limiting supply, and encouraging waste. That the supplies are to be limited, not restricted; the waste is to be encouraged, not allowed to run to profusion."

The author specially insists upon the importance of avoiding salivation.

In the treatment of constitutional syphilis, Mr. Wilson relies upon the biniodide of mercury, in doses of one third of a grain, three times a day, in the first instance; but in the more chronic forms, or tertiary phenomena of Ricord, mercury is said by him not only to be useless, but injurious. It is now that the use of the iodide of potassium is attended with such satisfactory results.

Mr. Wilson concludes with the treatment of lupus, which, as he regards the disease as syphilitic, he conducts on the ordinary principles of syphilitic medication. A remarkable case is detailed in which this method was eminently successful.

— A very elaborate review of M. Ricord's recent works on syphilis, is to be found in the 'Dublin Quarterly Journal of Medical Science,' to which we regret that our space precludes further allusion.

III.

REPORT ON THE RECENT PROGRESS OF PSYCHOLOGICAL MEDICINE.

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Bibliography.

Since the date of the last Report on this department of Practical Medicine, (Half-Yearly Abstract, vol. X, July—December 1849,) we have received the following works and papers connected with the subject of mental disease:

I. *Contributions to Mental Pathology, with Introductory Observations, containing the Past and Present state of the Insane in Ceylon.* By Dr. James George Davey. London, 1850, pp. 276. (See § III, No. 14.)

II. *Familiar Views of Lunacy and Lunatic Life.* By the late Medical Superintendent of an Asylum for the Insane. London, 1850, pp. 195. (See § IV, No. 23.)

III. *The Reciprocal Agencies of Mind and Matter, and on Insanity.* By J. C. Badeley m.d. (The Lumleian Lectures, 1851.) London, 1851, pp. 60. (See § VI, No. 37.)

IV. *Remarks on Insanity; its Nature and Treatment.* By Henry Monro, m.b. London, 1850, pp. 150. (See § III, No. 11.)

V. *Remarks on the Plea of Insanity, and on the Management of Criminal Lunatics.* By William Wood, m.d. 2d Edition. London, 1852, pp. 94. (See § V, No. 30.)

VI. *Articles on Reform in Private Asylums.* By Henry Monro, m.b. London, 1852, pp. 23. (See § III, No. 12.)

VII. *A Letter to Dr. Williams, Secretary to the Association of Medical Officers of the Hospitals for the Insane, on Criminal Lunatics.* By William Ley, m.r.c.s. Oxford County Asylum, 1851, pp. 8. (See § V, No. 30.)

VIII. *Notes on Provincial Asylums for the Insane in France.* By John Webster, m.d., f.r.s. Reprint from 'Journal of Psych. Med.' (See § III, No. 15.)

IX. *A Selection of Papers and Prize Essays on subjects connected with Insanity, Read before the Society for Improving the Condition of the Insane.* London, 1850, pp. 200. (See § IV, No. 27.)

X. *Reports on the Origin and Progress of Pestilential Cholera in the West-Yorkshire Lunatic Asylum during the Autumn of* 1849. By T. G. Wright, m.d. London, 1850, pp. 136. (See § VIII, No. 40.)

XI. *Insanity; its Causes, Prevention, and Cure.* By Joseph Williams, M.D., 2d edition, pp. 317. London, 1852. (See § VII, No. 38.)

XII. *The Journal of Psychological Medicine and Mental Pathology.* Edited by Forbes Winslow, M.D. Quarterly in exchange.

XIII. *The American Journal of Insanity,*—since the date of our last Report. We are indebted to the courtesy of Dr. Romega Beck, of Albany, for these Numbers. A copy of this volume of the 'Abstract' will be sent to Dr. Beck's agent in London.

XIV. *The New Moon; or, Crichton Royal Institution Literary Register.* Monthly.

XV. *Annual Report of the Commissioners in Lunacy to the Lord Chancellor.*

XVI. *Annual Reports of the following Lunatic Asylums and Hospitals:—Crichton Royal Institution, Dumfries.—New York State Lunatic Asylum (for several years).—Suffolk.—Cumberland and Westmoreland.—Montrose.—Royal Edinburgh.—Pennsylvania Hospital for the Insane.—City of Williamsburg, Virginia.—Aberdeen.—St. Luke's Hospital.—Littlemore* (Co. Oxford). *Manchester Royal Lunatic Hospital at Cheadle.—The Heigham Retreat, Norwich.—Lancaster* (at Rainhill).

§ I.—*Forms of Insanity.*

i. Mania; which is divided into—
   a. Acute mania, or raving madness.
   b. Ordinary mania, or chronic madness of a less acute form.
   c. Periodical or remittent mania, with comparatively lucid intervals.
ii. Dementia, or decay and obliteration of the intellectual faculties.
iii. Melancholia.
iv. Monomania.
v. Moral Insanity.
} These three forms are sometimes comprehended under the term partial insanity.
vi. Congenital Idiocy.
vii. Congenital Imbecility.
viii. General Paralysis of the Insane.
ix. Epilepsy.

A description of the disorders to which these terms are appropriated is likewise given, of which the following is the substance:

1. *Mania.*—This term is used to designate a particular kind of madness, as affecting all the operations of the mind; hence its synonyme, total or general insanity. Maniacs are incapable of carrying on, in a calm and collected manner, any process of thought; their disorder for the most part betraying itself whenever they attempt to enter into conversation. It likewise affects their conduct, gesture, and behaviour, which are absurd and irrational; their actions being characterised by great restlessness, appearing to be the result of momentary impulses, and without obvious motives. Mania is likewise accompanied by hurry and confusion of ideas, and by more or less excitement and vehemence of feeling and expression. When these last symptoms exist in an excessive degree, the disorder is termed—

Acute Mania, which is the first stage of the disease, and often tends to a

fatal termination, through the exhaustion occasioned by perpetual agitation and want of rest. It is also generally attended with considerable disturbance of the vital functions. The symptoms gradually abate, and the disease passes into—

Chronic Mania, which is attended with less excitement of the passions, less rapidity of utterance, and less violence of action. In this stage the disorder of the mind is not always immediately perceptible; but it soon becomes apparent that the patient is incapable of continued rational conversation or self-control, and that his acts are the result of momentary caprice, and not governed by rational motives. A great proportion of maniacs labour under illusions or hallucinations, or false impressions as to matters of fact; but in these illusive notions there is no consistence or permanence. Patients labouring under this chronic form of mania are often tolerably tranquil and harmless, and capable of being employed in agricultural and other pursuits.

Intermittent Mania (the third subdivision of mania) is a variety the existence of which has been much disputed, some medical writers of note denying the existence of lucid intervals altogether. As the Commissioners justly observe, the fact appears to be, that there are patients subject to occasional paroxysms of raving madness, but who have intervals of comparative tranquillity and rest. It generally happens, however, that after the alternations of raving fits and periods of tranquillity have continued for some time, the intervals become less clearly marked, and the mind is found to be weakened, the temper more irritable, and both the feelings and the intellectual faculties more and more disordered.

2. *Dementia.*—Chronic and protracted mania is frequently the prelude to a decay and final obliteration of the mental faculties, which is termed dementia. In some few instances, (generally the result of causes of a depressing nature, as sudden grief, &c.) dementia is the primary form of mental derangement. In those instances in which dementia is the sequel of protracted mania, it is not easy to determine the point at which mania ends and dementia begins. It differs from idiocy, in which the powers of the mind have never been developed, while in dementia they have been lost.

These two forms, mania and dementia, are the prevailing varieties of insanity in most large asylums, constituting, on the average, two thirds of the cases.

3. *Melancholia.*—Of this disease there are several degrees and varieties. Some patients display merely lowness of spirits, with a distaste for the pleasures of life, and a total indifference to its concerns. These have no disorder of the understanding, or defect in the intellectual powers; and, however closely examined, manifest no delusion or hallucination.

Another class of melancholics derive their grief and despondency from some unreal misfortune, which they imagine to have befallen them. Many are convinced that they have committed unpardonable sins, and are doomed to eternal perdition. Others believe themselves to be accused and suspected of some heinous crime, of which they are destined to undergo the punishment; and of this they live in continual dread, &c. &c.

All cases of melancholia have more or less a tendency to suicide.

4. *Monomania.*—This term is given to cases in which the intellectual faculties are unimpaired, except with relation to some particular topic. A frequent illusion of monomaniacs is that they hold conversation with supernatural beings.

5. *Moral Insanity.*—This term is used to designate a form of mental disease in which the affections, sentiments, and habits, and, generally speaking, the moral feelings of the mind, rather than the intellectual faculties, are in an unsound and disordered state. Cases of this description were formerly looked upon as an unaccountable phenomena. They are, however, now regarded as a distinct form of mental disorder in nearly all the public asylums. They are characterised by a total want of self-control, with an inordinate propensity to excesses of various kinds.

6. *Congenital Idiocy and Congenital Imbecility.*—Congenital idiots are persons whose intellectual faculties have never been developed. Congenital imbecility is the result of some original defect which renders the mind feeble in all its operations, though not altogether incapable of exercising them within a limited sphere.

7. *General Paralysis of the Insane.*—This is a species of monomania in which the individual affected fancies himself possessed of vast riches and power, and which is always attended with a general paralysis, distinguished at its onset by an impediment in the articulation, and gradually progressing to total obliteration of the power of locomotion, with inability to attend to the calls of nature, &c. This specific form of insanity was first pointed out by French physicians.

8. *Epilepsy.*—This disease exists complicated in various ways with defects or disorders of the mind; with imbecility; with dementia; with mania; or it may coexist with perfect soundness of mind.

[We reprint this summary from a former Report, (Half-yearly Abstract, Vol. VII,) the great varieties of nomenclature rendering it difficult often for young readers to distinguish between the different forms of mental disease.]

§ II.—*Statistics of Insanity.*

9. *Mortality in the Metropolitan Lunatic Hospitals and Asylums.*—In the return of Births and Deaths in London for the week ending May 17, 1851, published by authority of the Registrar-General, and in the summary of the London Returns of Mortality for the twelve years 1839—50, some interesting information is given regarding the mean annual mortality, *i. e.*, the annual mortality per cent. of the daily average number of inmates of the principal lunatic asylums in the London District.

The Table on the opposite page is copied from the summary :—

Table I.

Showing the Number of Inmates and Deaths in the Lunatic Asylums of the London District, with the Average Population and Mean Annual Mortality in each for the Year ending January 1, 1851.

Name of Lunatic Asylum.	Number of Inmates.						Number of Deaths Registered.					Annual Mortality per cent. of average Number of Inmates.
	1849.	1850.			1851.	Average.	1850. Quarters ending				Total.	
	Dec. 31.	Mar. 31.	July 1.	Oct. 1.	Jan. 1.		March	June.	Sept.	Dec.		
Kensington House, Town	69	70	76	76	72	73	3	..	1	3	7	9 59
Normand House, Fulham	14	14	14	14	15	14	..	..	..	..	..	....
Munster House, Fulham	32	35	33	33	27	32	1	..	1	3	5	15·63
Otto House, Fulham	24	25	25	26	26	25	..	..	1	..	1	4·00
Sussex and Brandenburgh House, Fulham	31	26	29	27	31	29	1	..	..	1	2	6·90
Blackland's House, Chelsea, North East	28	28	27	26	27	27	1	1	1	..	3	11·11
Northumberland House, Stoke Newington	60	62	62	58	58	60	1	2	1	..	4	6·67
Whitmore House, West Hackney	31	28	27	28	28	28	1	..	1	..	2	7·14
Pembroke House, South Hackney	109	105	107	108	107	107	3	..	..	..	3	2·80
St. Luke, City Road	201	195	208	194	184	196	..	2	6	7	15	7·65
Miles's, Hoxton House, St. Leonard	389	401	403	399	395	397	9	18	6	12	45	11·34
Warburton's, Bethnal House, Bethnal Green	506	517	532	545	538	528	13	13	8	13	47	8·90
Lunatic Asylum, Grove Hall, Bow	396	405	407	410	405	405	22	10	7	15	54	13·33
Bethlem, London Road	397	372	398	390	379	387	7	14	6	8	35	9·04
Lunatic Asylum, Effra Hall, Brixton	21	19	16	16	15	17	1	2	1	..	4	23·53
Retreat, Clapham	18	19	18	17	16	18	..	..	..	..	..	....
York House, Battersea	21	17	15	15	17	17	1	1	..	..	2	11·77
New County, Wandsworth	662	708	758	786	782	739	32	22	22	19	95	12·86
Peckham House, Camberwell	495	474	477	470	473	478	19	9	4	17	49	10·25
Camberwell House, Camberwell	305	332	324	325	320	321	14	7	9	10	40	12·46
Total	3809	3852	3956	3963	3915	3899	129	101	75	108	413	10·59

In the weekly return (for May 17, 1850,) we find the following table:

TABLE II.

Showing the Number of Cases Treated; Patients Resident, or Population; Deaths; Term of Residence; Deaths to 100 *cases; and Annual Deaths to* 100 *of the Sick Population in Eight of the large London Lunatic Asylums.*

Name of Asylum.	Total cases discharged, cured or otherwise, or dead, 1850.	Average term of residence (years).	Average number of patients in each asylum.*	Deaths registered 1850.	Deaths to every 100 cases admitted.	Annual deaths to 100 of the insane population.†
St. Luke	203	·97	196	15	7·39	7·65
Hoxton House (Miles) . . .	123	3·23	397	45	36·59	11·34
Bethnal House (Warburton's)	156	3·38	528	47	30·13	8·90
Grove Hall	152	2·66	405	54	35·53	13·33
Bethlem	394	·98	387	35	8·88	9·04
Surrey New County	234	3·16	739	95	40·60	12·86
Peckham House	184	2·60	478	49	26·63	10·25
Camberwell House	119	2·70	321	40	33·61	12·46
Total, or average . .	1565	2·21	3451	380	24·28	11·01

On this second table the Registrar General remarks:—"The average number of lunatics in eight of the large asylums was 3451; the deaths in the year 1850 were 380; the annual rate of mortality was, therefore, 11 per cent. But the patients remained more than two years in these asylums, (2·21 years,) and only 1565 were discharged recovered, relieved, unrelieved, or dead; consequently 24 in 100 cases terminated fatally, and of 100 who enter, 76 leave the asylums alive."

§ III.—*The Present Condition of the Insane.*

I. THE CONDITION OF INSANE PATIENTS OF THE HIGHER AND MIDDLE CLASSES.

Our attention has again of late been drawn to the question of the treatment of private patients in licensed houses, first by a series of papers by Dr. HENRY MONRO 'On Improving the Condition of the Insane,' reprinted in a separate volume, (London, 1852;) and also by a pamphlet by Mr. DICKSON, the resident medical officer of a public establishment near Manchester for the reception of the insane of the middle and higher classes, and to the well-ordered condition of which, in every respect, we can, from personal inspection, testify.

10. *Mr. Dickson's views of the Present State of the Insane in the Higher and Middle Classes.*—"If we examine (says Mr. Dickson) the Reports of the

* "The average number of sick resident was deduced from five quarterly enumerations; and the mean term of residence in days was obtained by multiplying the hospital population into 365, and dividing the product by the number of cases."

† I. e., the mean annual mortality.

Commissioners of Lunacy for 1850 and 1851, we shall find that not one third of the number of the insane in the middle and higher classes is accommodated at the public hospitals. We shall also find from these Reports that more than two-thirds of the insane of the middle and higher classes are under the charge of those who embark in the business of keeping "Private Asylums" or "Licensed Houses for the Insane," as profitable pecuniary speculations.

There are in England nearly three thousand persons, confined in upwards of one hundred and thirty establishments called licensed houses, the proprietors of which have as great an objection to an empty house as a publican could have to a similar predicament.

What are the temptations to which the proprietors of "licensed houses" are particularly exposed?

1. Reducing the expenses of the establishment to limits incompatible with the proper performance of their engagements to society in reference to their unfortunate inmates.

2. Continued detention of those eligible by convalescence *to trial at least* in society.

3. Accessibility to the interested suggestions of *nominal* friends of patients.

The evils arising from the first-mentioned temptation have been many, and of frequent occurrence, as may be substantiated by Reports on Asylums.*

The establishment of a house for the reception of lunatics is generally entered upon as a money speculation, by which the proprietor hopes to derive a profitable income, and perhaps to realize a small fortune. And he is warranted in this expectation from the success which he sees has attended the exertions of others similarly engaged.

The first thing he (or she, for frequently ladies are the proprietors of Private Asylums,) does, is to look out for some unoccupied mansion in the country, situated at a convenient distance from some large town, and containing a sufficient number of rooms for bedrooms, and suitable day-rooms. Having taken a lease of the premises, he proceeds to make such alterations as, while leaving ample and comfortable accommodation to the domestic part of the establishment, appears to be absolutely necessary for the safe keeping of the future inmates.

These alterations are not conducted in general upon the principle of contributing in the greatest degree to the comfort of the patients for whom they are intended, in respect to warmth, light, ventilation, dryness, opportunities of exercise, occupation, or amusement; but upon the make-shift principle of doing as little, and at as little expense, as possible. Even should the house and grounds be damp—a not unfrequent circumstance—there is very rarely any attempt made, as it involves an item of expense, to remedy the evil by draining. Should the windows be too large, they are barred with iron bars. Ventilation in the day-rooms may perhaps be attempted by means of a noisy revolving contrivance of tin, which keeps up a monotonous din all the year round, but in the bedrooms even this clumsy substitute for efficient ventilation is not adopted.

While these operations are going on, considerable exertions are made to obtain a license at the next meeting of the Justices. The license is granted; often—too often—without due inquiry into the character or qualifications of the holder of the license, who at once enters upon the important trust (as a pecuniary speculation) of responsibility for the confinement, treatment—moral and physical—and cure, if possible, of as many of her Majesty's lieges

* Vide Commission Reports, 1847.

pronounced unsound of mind as he can obtain the care of, within the limits of accommodation afforded by his establishment; and, of course, at such rates of periodical payment as shall leave to this philanthropist as large an excess of income over expenditure as may be."

As the subject is now before us, we certainly feel bound to state that this view of Mr. Dickson's has much truth in it—indeed it pretty nearly represents the average of asylums for the middle classes, and may justly be applied to many of the large licensed pauper houses receiving also a few private patients. Such descriptions cannot, however, with the slightest truth, be applied to the private houses the property of some of the leading London physicians engaged in this department,—houses which we consider in every respect better fitted for their purposes, to those who can afford the expense, than even that at Cheadle presided over by Mr. Dickson.

We need scarcely add, that the remedy Mr. Dickson proposes is *Public asylums* for the insane of the higher and middle classes—a proposal from its sweeping nature not likely ever to be generally adopted.

On the other hand, the suggestions of Dr. Monro for the remedy of the evils in question (which he also admits), are *the increased inspection of all private asylums, and the establishment of public asylums for the insane of the middle classes*, suggestions in every way deserving of attention.

II. ON THE GENERAL NECESSITIES FOR SOME SUCH SCHEME AS THAT SUGGESTED IN THE ESTABLISHMENT OF ASYLUMS FOR THE MIDDLE CLASSES.

11. *Dr. Monro's suggestion of Asylums for the Middle Classes.*—My arguments, says Dr. Monro, for this description of charity, divide themselves into two heads:

I. The necessities of the class contemplated.

II. The general advantage likely to arise from adopting *public* measures for the treatment of the insane of the upper classes.

On the matter of the necessities of the class I would urge—

1. That we frequently witness the grievous distress arising from the want of such means, and that the reason of this distress is manifest enough.

2. That the class for which I plead have, independently of the urgency of their distress, peculiar claims on the attention of those who feel for the sufferings of their fellow creatures, inasmuch as they have received hitherto peculiar neglect.

12. *Dr. Monro's suggestions for an Increased Inspection of the Private Asylums throughout the country.*—In my last observations, says Dr. Monro, on improving the present condition of the insane, I dwelt at some length on the injury inflicted upon poor but respectable patients by having no other asylum offered to them, through the dire distress of their disease, than County Lunatic Asylums or general hospitals for the poor. I suggested, as a remedy, the establishment of asylums for the middle classes, to be commenced by the aid of charity, and carried on by self-supporting means. This was a subject which affected only a class. The matter to which I would now draw attention is one more comprehensive in its character, and one which I have found, by the experience of many years, peculiarly to require remedy. I feel that no one can truly appreciate the merits of the case so much as those who have had personal experience; and therefore, however imperfectly I may be able to support my argument, I shall, without flinching, endeavour to explain what I feel so strongly. The matter, however, which I would now discuss, affects not only the happiness of the patient, but the honour and serenity of mind of his medical advisers, *I allude to a sufficient inspection, by those in authority, of private lunatic asylums.*

13. *Summary of Dr. Monro's arguments in favour of an increased inspection of private asylums.*

1. Frequent visits are necessary to free the minds of patients of injurious anxiety.

2. Frequent visits are necessary to free the mind of the proprietor in doubtful matters of discharge.

3. Frequent visits are wanted to settle matters of unavoidable disagreement between patients and their ordinary superintendents and advisers.

4. Frequent visitation will afford a reference to a disinterested tribunal a short time after a patient's first confinement.

5. An additional reason urging us to adopt every measure which is calculated to allay all reasonable ground for suspicion in our conduct towards the insane, is the fact that morbid suspiciousness forms one of the most distinctive characteristics of the insane.

6. An increased inspection might be the means of giving satisfactory information as to the comparative value of asylums.

We regret that our limits compel us to refer our readers to Dr. Monro's essays for further illustration of this important subject, and in the urgent necessity for both which objects, viz., *an asylum for the middle classes*, and *also increased inspection of private asylums*, we in every way concur, as indeed must every one practically conversant with the defective workings of the present system.

14. *Condition of the Insane in Ceylon.*—[We extract the following summary of the condition of the insane in Ceylon from Dr. Davey's history of his ill-requited efforts in their behalf.]*

I found the insane in Ceylon, in 1844, in neglect and wretchedness, the companions of debtors and criminals, and of the leprous, blind, and maimed.

I found them in a lazar-house, where filth and corruption, dilapidation and ruin were alone visible in some one or more of their protean shapes.

I found them, I may truly say, in chains and manacles, and made subject to a variety of personal restraints and to solitary confinement, almost perpetual seclusion.

I leave them (the insane), in 1849, the occupants of a well-built, airy, and commodious building, wherein every available care, attention, and forethought are employed for their relief and cure.

I leave them, in 1849, in an establishment set apart for their exclusive reception, where they are not now, as formerly, subject to the presence of the leprous, blind, and maimed.

I leave them, in 1849, in peace and in the enjoyment of the various bodily powers which belong to their nature, and free to move hither and thither at their pleasure; and herein rests my best consolation for whatever doubts and uncertainties the future might unfold to me. May after-years find the insane at Colombo equally well to do! but if the local government of Ceylon thinks that the improvements effected among the insane can *now* be perpetuated and continued on with only a little attention and with very ordinary care, I fear, it will one day find itself mistaken. I know that an uninterrupted and daily attention was required on my part to preserve the necessary and healthful influences in the establishment, and to prevent the recognition of wrong principles of treatment; if they should once take root there, the strait-waistcoat will not long remain in disuse, and then to retrace the present vantage ground will be a work of little or no difficulty.

* Contributions to Mental Pathology, with Observations concerning the Past and Present State of the Insane in Ceylon. London, 1850.

15. *French Provincial Asylums for the Insane.*—Dr. Webster ('Journal of Psych. Med.,' Oct. 1850,) has published an interesting account of a visit to several of these institutions. Our limits oblige us to confine this notice of his able paper to one or two cursory selections.

16. *General Statement of Dr. Webster's Observations.*—The number of patients of both sexes received, during the year 1849, into the eight provincial asylums* for the insane, visited by Dr. Webster, was almost identical; 484 lunatic males and 483 females having been admitted. More men, however, were cured than women, 208 being of the former to 187 of the latter sex; whilst the total deaths not only surpassed the aggregate recoveries, in both categories, but the proportion of fatal cases was greater amongst male than female patients; the difference being thirty-six fewer deaths amongst the latter division.

17. *Mechanical Restraint in French Provincial Asylums.*—Respecting the amount of mechanical restraint actually noticed in the different asylums, at the period of my visit during last August and September, the figures I have given in the table† will, doubtless, attract much attention. Taken collectively, the numbers show, that forty-four male lunatics, out of 1464 then resident, were in camisole, some being also otherwise restrained; thereby giving one individual in restraint to every $33\frac{1}{4}$ male inmates; or three per hundred. Amongst the female lunatics, again, the proportion was somewhat larger; seventy-two persons of that sex, out of the total 1902 resident patients, being under mechanical coercion; thus making one female in restraint to every $26\frac{1}{2}$ inmates; or at the rate of 3·78 per hundred. In contrast with this report respecting the above-named French provincial asylums, I would now place an official statement of the practice pursued at Bethlem hospital, during the same period. At this establishment, where formerly the strait-waistcoat, with various kinds of personal coercion, were in even greater use than on the other side of the English channel, *not one insane patient*, amongst an average population of 391 lunatics, was under constraint of any description during the five weeks ending 20th of last September, when I first revisited that institution, after my return from the continent, and which embraced the whole time referred to in this narrative.

18. *Domestic Arrangements in French Provincial Asylums.*—In French asylums, there is, I believe, no matron; or at least, no female attendants having the attributes of that important personage in English institutions; and which some consider an advantage in favour of our neighbours. A superior "sœur religieuse," possessing power over the other female attendants, is, however, not uncommon; whilst in the laundry and other departments there are various female officials; but the treatment and general management of the patients, whether on the male or female division, rest solely with the physician. In this respect I consider the system pursued in the new French institutions well worthy of imitation on the English side of the channel; where the matron sometimes becomes too important, from not being sufficiently under medical control, according to the opinion of many persons well qualified to decide this point from their own experience.

On the other hand, each departmental asylum has a director, who is a most important personage; being the chief superintendent of everything appertaining to the lay administration of the establishment. In some instances, the resident physician is likewise director; but in many asylums, the offices are entirely

* Bon Sauveur, St. Meén, Nantes, St. Gemmes, Le Mans, Blois, Orleans, St. Yon.

† For table, see Dr. Webster's paper, 'Journal of Psychological Medicine,' Oct. 1850.

separate; which arrangement, to my mind, appears altogether the most eligible, as the attributes of both are incompatible, particularly in a large establishment. Under such circumstances, it must be allowed, that a physician whose mind is frequently engaged in financial questions, or if harassed by extensive commissariat duties, will not be able to find much leisure time for study and science. In an asylum, having a very limited number of inmates, the duties being in that case of a restricted description, the junction of the two offices may be permitted; and as such an arrangement will augment the remuneration of the physician, generally so underpaid, it has that advantage, without being then likely to prove injurious to the patients.

§ IV.—*Government of Lunatic Asylums and Moral Management of Insanity.*

We are obliged to confine the first part of this section, on the present occasion, to one or two extracts from the several reports which have reached us, and are above acknowledged (Bibliography). Any one reading these several reports must be struck with the steady progress which is being made, throughout our several public asylums, in the moral management of mental disease.

As it is only in his annual report that Dr. Browne, of Dumfries, can be induced to communicate his views to the profession, we feel that we shall consult the interests of our readers by drawing largely on his, the most able of the published reports of our public institutions.

19. *Amusements of the Insane.**—"It is still a custom that some form of recreation should be provided once every week. It is of vast importance to vary these experiments as much as possible; but when external resources fail, as they often do, evening parties are assembled in the drawing room, where music, games, and simple refreshment break in upon the monotony of seclusion, revive conventional restraints, while they suggest those social feelings and sympathies which isolation is calculated to impair or destroy. To give to such meetings a meaning and an object, they are held upon the birth-days of meritorious inmates, or upon national festivals, in both instances associating the present with the past, and personal gratification with the interests, anniversaries, and recollections common to all men. Theatrical representations have been revived with considerable success, and with unequivocal pleasure to the audience. Five patients have joined in these attempts; and as the experiment proceeds, aspirants for histrionic fame are found to multiply. The popularity of an amusement, and the enjoyment afforded, are not sufficient guarantees for its utility; but there are in the direct addresses to the intellect, the attention demanded, the ludicrous thoughts excited, ample illustrations of the modes in which the drama may act, and act beneficially, upon even darkened and diseased minds. Although there is constant access to billiards, chess, cards, bowls is still the popular game. It combines so many of the pleasures of country life with the gentle stimulus of personal dexterity, that the attractions presented to loungers and lookers-on, as well as to the players, explain this partiality; but a prolonged and keenly-contested struggle for the championship has enhanced this interest, and appealed to more powerful feelings than the love of exercise or of sport. It has been observed that the players naturally fall into aristocratic, literary, and plebian groups. When

* Dr. Browne's Report of the Crichton Institution for Lunatics. 1850.

the rank, or peculiarities, or prejudices of an individual oppose obstacles to physical labour, such an amusement is a valuable, although not an adequate substitute."

20. *The nature of Moral Influences on the Insane.**—"The character of the moral management is activity without excitement, progress, the combination of self-government, with appeals to the intellect and sentiments. There is always something to expect, to prepare for; some anticipation, or some retrospect. Patients are participators in every arrangement. They are identified with the recreations, as well as the labours of the community. They are led to understand that each progressive step is not merely for them, but by them. They are their own gardeners, labourers, players, musicians, precentors, librarians, and, under certain restrictions, their own police. Each day has its appropriate relaxation, as well as its duties; but monotony, which engenders torpidity rather than tranquillity, even the monotony of continued recreation, is obviated by useful pursuits and physical exertion."

21. *Literary Pursuits of the Insane.*†—"The number of cultivated minds which still retain former predilections, though shorn of former power, may be learned from the solicitude displayed in adding to the collection of books, in multiplying literary pursuits, and in extending the range of intellectual impressions. The occupation of the inmates of one gallery may be described as indicative of the high culture of many of those under treatment, the varied tastes and tendencies to be gratified, and the demands daily made for means to prosecute studies or to relieve monotony:—One gentleman is engrossed in the composition of a work, which is unfortunately an extension of Hume's sceptical opinions; another passes from etymological and ethnological researches, which embrace several languages, to the illustration of astronomy by diagrams, models, and drawings; a third divides his time between the guitar and the easel; a fourth reads romances, and teaches boxing and single stick; a fifth paints in chalk; a sixth in oil; one is an omnivorous and indefatigable reader, and complains that access to two extensive libraries is insufficient to satisfy his appetite; the inclination of one disposed to poetical composition, of another to the perusal of history, of a third to the study of Arabic; and one only is a trifler, who is compelled, by the rules agreed upon among his associates, to engage in reading when conversation is prohibited. In other parts of the house similar scenes occur; and individuals will be encountered translating Hebrew, Greek, Latin, French, Italian. Anacrean has been rendered into English verse anew, and the author seeks a Mecænas. An attempt is made to repair the defects of an unfinished education, and of an unbridled temper, by subjection to teachers. A governess recalls her early acquisitions in the tuition of the young, and the reclamation of the weak-minded. The fruits of such activity are masses of manuscript, besides those which appear in the 'New Moon,' portfolios of drawings, paintings, and music, and the circulation of hundreds of volumes. Ten individuals compose verses of considerable beauty and elegance; and the prose writers are much more numerous. One gentleman has converted the walls of his parlour into a picture gallery. He is the artist; and whatever may be the merit of his productions, they are intended to represent to his memory a tour in Switzerland, of which he retains vivid recollections; and perhaps they suffice to do this. The room of another is crowded with maps of countries which he has visited in imagination; plans of campaigns and combats, of which he is the champion and hero. Autobiographies of years of seclusion have been written; volumes

* Dr. Browne's Report, 1851. † Ibid.

on the model of the century of inventions; and one patient is engaged eagerly in framing a commentary upon a translation of Grotius, the work of another; a self-taught miniature painter has sprung up, and proposes to cultivate, when at liberty, a talent that may fairly be claimed as the result of captivity; a member of a learned profession proves in a very plausible, if not very demonstrative, manner, that the American reaping machine, the Exhibition itself, are audacious plagiarisms from forgotten discoverers. A lady condemns Keble, and has composed a volume of hymns, in order to establish her right of criticism; another regards Campbell with a hero-worship, and addresses her idol in strains intended to imitate his own. Such emulation and admiration may not be worthy of unqualified approval, but they are the faults of vigorous minds; they may consist of a morbid feeling ingrafted upon an original disposition, but the act of composition, from whatever motive it may proceed, is beneficial and invigorating. It could only be by the sudden withdrawal of this liberty of thought, and of these intellectual luxuries, that their full efficacy could be tested in establishing tranquillity, and in suggesting a deportment which closely resembles, if it do not entirely realise, that of sanity and serenity."

22. *Lectures to Patients.*—"Not only have lectures been, and may be made, an instrument in enlarging the experience and increasing the usefulness of those intrusted with the practical management of the inmates, but they have been made to act directly upon the wayward tempers, the disordered fancies, of the patients; they have formed an important department in moral treatment and intellectual training. Besides brief courses delivered by the Rev. A. Shepherd, Dr. Barker, Mr. Cuthbertson, upon Education, Botany, and Chemistry, a full course, amounting to forty-eight, was given by Dr. Gilchrist on the general and microscopical anatomy and physiology of plants. It is believed that this is the first time that oral instruction in science has been systematically employed as a remedial agent in this country. It has been most successfully tried in one asylum, in the United States. In a former report, where an humble attempt of the same kind is recorded, the utility of such an instrument in arresting the attention, in supplanting vague delusions by definite impressions, was insisted upon, and sincere regrets were expressed that the available resources were so few and so feeble. The unpretending, but most efficient, labours of Dr. Gilchrist appear to have realized these views. They were confined to the educated and convalescent, and to those who manifested an interest in the beauties of external nature. They were at once dogmatic and conversational; they were illustrated by diagrams, by specimens from the garden and museum; they embraced the history as well as the structure, the uses as well as the forms of the vegetable world; and addressed the sentiments as well as the observing powers and memory. It would be presumptuous to conjecture what, or how much, benefit was accomplished during these exercises; but it is legitimate to affirm that they were calculated to give the mind an objective direction, to divert it from self-analysis, self-reproach, and self-exaltation, to subjects suggestive of early and pleasing associations, unexciting reflections, and, it may be, of that order, and system, and symmetry, of which it has been partially deprived. Two lectures on astronomy were contributed by a patient. They were characterised by enthusiasm, ingenuity, and acumen; which, like grains of gold mingled with sand, are so often discovered associated with the wreck of noble faculties and worthless acquisitions." (Dr. Browne's Report, 1851.)

23. *On the Removal of the Insane from the presence of their Friends.*—We extract the following judicious observations from a small practical volume

entitled 'Familiar Views of Lunacy and Lunatic Life,'* which contains some excellent hints for the guidance of such as only occasionally are called upon to deal with the insane.

That great benefit is frequently conferred on an individual in a disordered state of mind by removing him from home, and placing him under the care of strangers, is a fact so well established by a multiplicity of evidence, that it need not be here insisted on at length. But admitting it to be unquestionably established, how is it to be accounted for? Have mad-doctors any remedies for the cure or mitigation of lunacy, of which they have contrived hitherto to monopolise the secret, and which they may dispense or withhold at their own will and pleasure? In truth, they have none; and in many instances where a cure is expedited under their hands, it would seem to be simply because the patient is taken away from what, so far from being a comfort to him, is, in fact, a source of perpetual worry and irritation—namely, the presence of his own friends and relations. This may seem paradoxical, but it is, nevertheless, strictly true. If a lunatic has a particular and rooted aversion, in nine cases out of ten, it attaches to the very person who, before the attack, possessed his tenderest affection; hence it is, as Esquirol remarks, that he is so indifferent to his relations, and oftentimes so dangerous; while, on the other hand, strangers are, comparatively at any rate, agreeable to him.

The presence of strangers will frequently suspend the delirium of the insane, either by the influence of new impressions, which is always useful, or from a secret feeling of self-love, which induces lunatics to conceal and screen from general observation the state of mind which they are conscious of having betrayed to those immediately about them. Patients are seen not unfrequently to appear quite calm before their physician or strangers, while they are at the same time abusing their relations or their friends in an under tone of voice.

24. *Temporary Removal.*—There can be no doubt, then, that whenever lunacy is seen to exhibit itself in this particular form—whenever the husband or wife, or sisters and brothers, as the case may be, with whom a deranged person must necessarily be frequently in contact, have become the causeless objects of his suspicion and hatred—when they are imagined contrivers of all the plots and conspiracies which a madman so perpetually conceives to be in course of hatching against himself, the sooner he is removed from the scene of their supposed machinations the better. No man in any state of mind can possibly derive comfort from the presence of those whom he accuses, in the language of Mad Tom, of having "laid knives under his pillow, halters in his pew, and ratsbane by his porridge;" and to whom it is imputed that they have "made him proud of heart, to ride on a bay trotting-horse over four-inched bridges, to course his own shadow for a traitor."† Reason and analogy would suggest that this must be so; observation shows that it decidedly is so; and therefore, if we wish to do him "some charity whom the foul fiend vexes," we may, in a great number of instances, use no scruple in pronouncing on him a sentence of temporary divorcement from his home—and the household gods whom his distempered imagination has converted into the likeness of malevolent demons.

25. *Cases of Insanity in Different Classes; means to be adopted in each vary.*—But to whose custody are we to consign the invalid when the subject has been duly discussed, and the conclusion arrived at that his separation from

* By the late medical superintendent of an asylum for the insane. London, 1850.

† King Lear.

home would be in itself advantageous and salutary? This is very often a question more perplexing than any which may be supposed to occur in connection with the subject of his treatment, and must be determined by circumstances, irrespective of the consideration of merely facilitating and hastening a cure. In those classes of life where the pecuniary means are scanty in proportion as the station is humble, there is but little or no choice; and it is fortunate that in many instances there is no set-off to be reckoned against the benefits which result from an early and prompt recourse to one of the public hospitals. The husbandman or the journeyman mechanic may be seen constantly resuming his labours on his return to convalescence, without his peace of mind being troubled by the remarks of his neighbours, inasmuch as his prospects are not marred by any supposition on the part of his employers that his right hand has lost its cunning, because his head has lain for a while under the imputation of having done the like. With domestic servants it is unfortunately different. An attack of insanity is often a bar to the resumption of their previous occupation in the situation they were holding at the time of its occurrence, and it will be easily conceived that with them the difficulty of procuring another engagement, on dismissal from a lunatic asylum, is very often quite insuperable. To have been the means, more than once, of getting employment for an individual thus unhappily circumstanced, by overcoming the scruples of the master or mistress of a family, and inducing them to depart from the beaten track of prudential observance, is a source of pleasing recollection in which we can indulge without having had as yet any cause to regret the unsuccessful issue of an experiment which few are willing to hazard. Our failures in the like attempt have, however, been most discouragingly frequent. Nor do we impugn the judgment or feeling of the public on this score. Individuals may choose, for charity's sake, to incur risk without blame attaching to others for declining to follow their example. We merely mention the circumstance to show how general is the feeling concerning the permanently disabling effects of insanity; so much so indeed is it that a single attack, if at all protracted, is considered at head quarters so completely to disqualify the soldier or sailor from continuance in the service, that he is often induced, Ulysses-like, to feign madness in order to procure his discharge. Such a one is called a malingerer or skulker. The latter term is more exclusively used in the navy.

But in the cases to which we are more particularly adverting, the craft of the Homeric dissembler would often be gladly made available to induce a belief that *no* such disqualifying affliction as insanity had ever occurred to the applicant for place or preferment. This observation applies with more or less force to thousands depending on their exertions for a livelihood, besides those who are in the rank of domestic servants, and particularly to such as seek to be in any office requiring more than ordinary trustworthiness and circumspection; and the higher the standing occupied by the convalescent in the social scale, the greater may be the difficulty which herein besets him. Such a functionary, for example, as Lowten, the copying clerk, might, on his release from confinement, reasonably expect permission to resume his high stool and desk in the outer office of Mr. Perker, the solicitor; but it is questionable if even the good-natured Pickwick would not have some misgivings about consulting Mr. Perker himself, his well-known legal adviser, were he, on calling at Gray's Inn, to find him in precisely similar circumstances.

It is, then, with a view of calling earnest attention to the subject of the disposal of lunatics requiring temporary separation from their friends, that we are thus, we trust not too tediously, diffuse. It is in cases of a first attack

more particularly, especially where the subject of it is in the middling classes of life, or in domestic service, that a great deal of caution should be exercised. When once such a person has been within the walls of a lunatic asylum, the chances are that a very serious damage has been done to his reputation. He carries about him a blot on his character which time will not easily efface. He has been mad! He has been the inmate of a mad-house! He has been entered in day-book and ledger as a madman; and though it may never occur to him again in the whole course of his after life to "put an antic disposition on," yet he cannot persuade the public but that he is at all times ready to do so. He has become a marked man. The least peculiarity in him, which would be unnoticed in another, merely confirms the general suspicion, and he may carry to the grave a reputation for unsoundness of mind, which, but for the well meant indiscretion of his friends, it would never have occurred to any one to bestow on him. We are not saying that this is a state of things which can always be prevented. We merely wish it to be understood that it occasionally may, and that sometimes mischief has been allowed to befal an individual, which would not have occurred had some different course been adopted with regard to his treatment. Take, for example, such a case as that of some young medical student. He comes to town provided with funds for paying the expenses of his lectures, &c., gets into a bad set, loses his money at cards, drinks freely to drown his vexation, and then "grief aids" debauch; "remembered folly stings;" his reason loses her balance, and he becomes the subject of a violent attack of mania. His friends are now sent for—all is confusion—they know not what to do—when some one suggests that he is well acquainted with Mr. So-and-So, who has an establishment for the insane, which bears an excellent character, and where he is sure to meet with the kindest treatment. He is sent off accordingly. Mr. So-and-So's good name is not belied, and the patient is discharged in a fortnight, cured not only of his madness but of the folly which led to its occurrence. So far so good. But the matter ends not here. The mere fact of his having been an inmate of Mr. So-and-So's asylum may, to the end of this man's days, be a source of great detriment to him. "Like a burr" it will "stick."

This is just the sort of case in which the assistance of one of the hired keepers would be of eminent service. When the patient is well he is congratulated by his country cousins on his recovery from an attack of *brain fever;* and if his landlady is reimbursed for the loss of her broken looking-glass, or two or three articles of furniture, and for the endurance during a few days of a little more noise than she may have bargained for, she will most likely not even allude to the fact of her lodger having been at one period of his illness simply "*a little light-headed!!*"

It is obvious, however, that in such a case as this, and indeed in numerous others which are more or less analogous, it is not always feasible to provide for the due care and management of a patient, particularly when noisy and violent, in the house where the first outbreak of disorder has taken place. Removal is indispensable; and as the door of the hotel and the private lodging house are apt to be found closed against the admission of a raving madman, it is as well to make it understood that there is still one shift left before the regular lunatic asylum is resorted to as a matter of necessity. Many of the London medical men, connected with lunacy practice, have at command, or know where to point out, some quiet domiciles unconnected with any large establishment, in which patients can be received with the requisite privacy, and remain until the period of their convalescence. Such cottages may be found in the neighbourhood of the Regent's Park, and other convenient localities, within an easy distance of London, and no doubt the like accom-

modations are to be met with in the vicinity of most large cities. They are, in fact, what they are very frequently termed, "mad lodgings." To a retreat of this sort the objection is that it is very expensive; and that the comfort of a patient would be better consulted by sending him at once to a regular establishment, where the arrangements are generally on a plan better calculated, in most respects, for his proper treatment and supervision. To this we quite agree; but we only recommend the adoption of the plan in cases where a temporary sacrifice can be made, and where it is of importance not to lose sight of the ultimate object on which we have been descanting, as well to keep in view what is more immediately at heart—namely, that of the patient's recovery.

26. *Moral Management.*—In the selection of papers and prize essays recently published by the Society for Improving the Condition of the Insane is printed an essay on the Moral Management of Insanity, in which we endeavoured to sketch the existing relations between the intellectual operations of the mind in health and in disease—a connection which, we feel satisfied, would, if more diligently traced out than it has hitherto been, yield a deeper insight than we now possess into the more hidden springs of insanity.

27. *The Cost of Maintenance of Pauper Lunatics.*—In Mr. Hill's Report, (North and East Ridings of Yorkshire Lunatic Asylum,) 1851, we find the following statement of the average cost per head per week for pauper lunatics.

SUMMARY OF COST PER HEAD PER WEEK.

	s.	*d.*
Salaries and wages	2	$7\frac{3}{4}$
Provisions	2	$9\frac{1}{2}$
Necessaries	0	$7\frac{1}{2}$
Surgery and Dispensary	0	$0\frac{1}{4}$
Clothing	0	$3\frac{3}{4}$
Farm and Garden	0	$2\frac{3}{4}$
Miscellaneous	0	2
	6	10
Less from miscellaneous receipts	0	$7\frac{1}{4}$
Actual cost	6	$2\frac{3}{4}$

To this must be added interest on capital sunk on buildings, say £100 a head at 5 per cent., equal to about 2*s.* a week more.

28. *On the Construction of Asylums.*—We here reprint from the 'American Journal of Insanity,' July, 1851, the following very able Report on the Construction of Hospitals for the Insane, made by the Standing Committee of the Association of Medical Superintendents of American Institutions for the Insane, at its meeting in Philadelphia, May 21, 1851, and which is a fair sample of the practical contents of this periodical:

1. Every Hospital for the Insane should be in the country, not within less than two miles of a large town, and easily accessible at all seasons.

2. No Hospital for the Insane, however limited its capacity, should have less than fifty acres of land, devoted to gardens and pleasure-grounds for its patients. At least one hundred acres should be possessed by every State Hospital, or other Institution for 200 patients, to which number these propositions apply, unless otherwise mentioned.

3. Means should be provided to raise ten thousand gallons of water, daily, to reservoirs that will supply the highest parts of the building.

4. No Hospital for the Insane should be built without the plan having been first submitted to some physician or physicians who have had charge of a similar establishment, or are practically acquainted with all the details of their arrangements, and received his or their full approbation.

5. The highest number that can with propriety be treated in one building is two hundred and fifty, while two hundred is a preferable maximum.

6. All such buildings should be constrncted of stone or brick, have slate or metallic roofs, and as far as possible be made secure from accidents by fire.

7. Every Hospital having provision for two hundred or more patients should have in it at least eight distinct wards for each sex, making sixteen classes in the entire establishment.

8. Each ward should have in it a parlour, a corridor, single lodging-rooms for patients, an associated dormitory, communicating with a chamber for two attendants; a clothes room, a bath room, a water closet, a dining room, a dumb waiter, and a speaking tube leading to the kitchen or other central part of the building.

9. No apartments should ever be provided for the confinement of patients, or as their lodging rooms, that are not entirely above ground.

10. No class of rooms should ever be constructed without some kind of window in each, communicating directly with the external atmosphere.

11. No chamber for the use of a single patient should ever be less than eight by ten feet, nor should the ceiling of any story occupied by patients be less than twelve feet in height.

12. The floors of patients' apartments should always be of wood.

13. The stairways should always be of iron, stone, or other indestructible material, ample in size and number, and easy of ascent, to afford convenient egress in case of accident from fire.

14. A large Hospital should consist of a main central building with wings.

15. The main central building should contain the offices, receiving rooms for company, and apartments entirely private, for the Superintending Physician and his family, in case that officer resides in the Hospital building.

16. The wings should be so arranged, that if rooms are placed on both sides of a corridor, the corridors should be furnished at both ends with moveable glazed sashes for the free admission of both light and air.

17. The lighting should be by gas, on account of its convenience, cleanliness, safety, and economy.

18. The apartments for washing clothing, &c., should be detached from the Hospital building.

19. The drainage should be under ground, and all the inlets to the sewers should be properly secured to prevent offensive emanations.

20. All Hospitals should be warmed by passing an abundance of pure fresh air, from the external atmosphere, over pipes or plates, containing steam under low pressure, or hot water, the temperature of which at the boiler does not exceed 212 degrees F., and placed in the basement or cellar of the building to be heated.

21. A complete system of forced ventilation in connection with the heating is indispensable to give purity to the air of a Hospital for the Insane, and no expense that is required to effect this object thoroughly can be deemed either misplaced or injudicious.

22. The boilers for generating steam for warming the building should be a detached structure, connected with which may be the engine for pumping water, driving the washing apparatus, and other machinery.

23. All water closets should as far as possible be made of indestructible materials, be simple in their arrangement, and have a strong downward ventilation connected with them.

24. The floors of bath rooms, water closets, and basement stories should as far as possible be made of materials that will not absorb moisture.

25. The wards for the most excited class should be constructed with rooms on but one side of a corridor, not less than ten feet wide, the external windows of which should be large, and have pleasant views from them.

26. Wherever practicable, the pleasure grounds of a Hospital for the Insane should be surrounded by a substantial wall, so placed as not to be unpleasantly visible from the building.

§ V.—*Judicial Insanity.*

In the several numbers of Dr. Winslow's 'Journal of Psychological Medicine,' will be found very able reports of all the judicial proceedings connected with the insane; to which our space obliges us to refer our readers who wish for details and judgment, be it on Robert Pate, or on the latest case, Mrs. Cumming. We can speak in the strongest terms of the accuracy and ability evinced in this, as in other departments of Dr. Winslow's Journal.

Dr. Jamieson, of King's College, Aberdeen, has published a series of lectures on the medical jurisprudence of insanity in the late 'Medical Gazette.'

29. *Instinctive Imposture.*—Dr. Kinglake * relates two cases, which came under his own personal observation, in illustration of a form of *moral unsoundness*, which has not hitherto received from the mental pathologist the attention it deserves; viz., that peculiar perversion of the moral feelings, which gives rise to a class of actions which may be termed *instinctive imposture*, in contradistinction to the acts of deception which are prompted by intelligible motives, and practised with a view either of obtaining some real and practical benefit, or of avoiding some threatening evil.

Looking to the nature of instinctive actions in general, the perfectness and regularity with which they are performed, so long as the impulse which prompts them is felt in its due intensity, and the immediate interruptions they sustain, if, through the intervention of any mental process, or other feeling of the mind, specially directed towards these instinctive acts, such impulsive feelings become blunted or otherwise changed from their normal standard, may it not be inferred, that the will would in a similar manner be equally operative (provided it be exerted in sufficient strength) in suspending or interrupting that other class of instinctive actions, which are excited by impulses of a morbid character?

Assuming, then, that a vigorous effort of the will *is* capable, in many instances, of breaking up the relation subsisting between a morbid impulse, and the perverted course of actions consequent thereto, how happens it, that this particular morbid propensity to deceive is not more frequently controlled by the will, seeing that the subjects of such perverted impulse are, in almost all cases, fully alive to the wrongfulness of their acts? Is it not that the power of the will is either not exercised at all in such cases, or is exercised in so feeble a manner as not sufficiently to antagonise the more rapid and energetic working of the abnormal impulse, which by reason of the inactivity

* Monthly Journal, Jan. 1850.

of the volitional force is thus *unresisted*, rather than rendered *irresistible*, by virtue of the intensity of the impelling force.

The frequent association of cases of instinctive imposture with the hysterical temperament, in which the power of exercising and rightly directing the will is known to be so limited, appears to strengthen the above supposition, whilst it suggests the propriety of likening the pathology of such cases rather to that class of nervous diseases of which hysteria is the type, than to those graver and more permanent changes in the intimate constitution of the brain which are represented by insanity, towards which, however, the lesser mental affection tends ultimately to gravitate, if not opposed by counteracting influences. Under this view of the nature of instinctive imposture, the prophylactic measures to be adopted against the growth and development of the morbid feelings of which it is the result, should be those proper to hysteria generally, whilst the paroxysm of deception (so to speak) would most surely be suspended, by giving occasion for the exercise of such strong counter-motives, as the fear of punishment, the threatened exposure of the imposture, or the opening up new prospects of pleasurable excitement, tend necessarily to create.

We regret that our limits prevent us from giving the details of Dr. Kinglake's two interesting cases. We were recently consulted regarding a case very similar to Dr. Kinglake's second one, in which we had some difficulty in proving the imposture practised. The subject was a servant-maid, who kept the house of a friend in several day's alarm, from the pretended presence and haunting of a man of threatening appearance, whom no one else could ever see.

30. *Criminal Lunatics; plea for a State Asylum.*—Owing to the importance the subject of Criminal insanity is at this moment invested with, we desire to draw the attention of our readers to Dr. Wood's essay on the plea of Insanity, and on the management of Criminal Lunatics, which we are glad to see has just reached a second edition, where they will find much valuable information—the result of Dr. Wood's long and well-employed experience as medical officer of Bethlehem Hospital.

One extract—his plea for a *State Asylum*—we would here subjoin:

"This brings us to consider what becomes of those who are acquitted of various offences on the plea of insanity. It has already been observed that we find, amongst what are called criminal lunatics, two distinct classes, viz., sane and insane; but these latter are again made up of two very different descriptions of persons: for instance, a certain proportion are insane convicts, and the remainder are those who have never committed any crime until, as a consequence of their mental malady, they have lost that control over their actions, the exercise of which had hitherto enabled them to occupy the position of respectable and useful members of society.

"Convicts who become insane while undergoing their sentence of imprisonment or transportation, would be properly distinguished by the description 'Insane Convicts;' and those who have committed some offence under the influence of insanity, and have been acquitted on that ground, might be conveniently known as 'State Patients.' If both are to occupy the same establishment,—and there seems no very good reason why they should not,—this might be called the 'State Asylum;' but the two classes should most undoubtedly be kept perfectly distinct. Both are entitled to the benefit of such treatment as is best calculated to restore their reason; and though both are, for the time, patients, it must not be forgotten that one class only are convicts. These latter, according to the existing system, have little to complain of, excepting

the want of active employment, for they are at least as well cared for in an asylum as in a prison, and in many respects they are much better off, and have many more comforts and means of enjoyment. But what is sufficient for the 'Insane Convicts,' is cruelly inappropriate for the 'State Patients,' whatever their crimes may have been; the State is no doubt called upon to protect society from a repetition of the outrages they have committed, and most properly enforces the safe custody of the delinquents; but it has no right to inflict punishment. The justice of the case, therefore, is met by providing these individuals with a maintenance in the 'State Asylum,' and, in the case of those who have occupied a superior position in society, and whose friends are able to contribute to their support, allowing them such additional comforts as they would have had if their malady had not gone on to its present intensity, and led them to the commission of crime. There seems no reason why the patients of this class should not be allowed, within certain limits, to live in the 'State Asylum' according to their means, on somewhat the same principle as those confined for offences, not criminal, in the Queen's Prison. There is something quite inconsistent with our notions of humanity and justice, in a system which compels an unfortunate gentleman to associate with the very outcasts of society; and yet, if an individual, whatever his rank and station in the world, whatever his high moral character and intellectual attainment, should unhappily become the victim of insanity, and, in a furious paroxysm of maniacal excitement, inflict some fatal injury on another, the law recognises no real distinction between him and a convicted felon, whose whole career has been one of depravity, vice, and infamy. It cannot be supposed that the supervention of insanity in the case of such a lawless outcast can have done anything towards purifying a being so fallen; and yet one might almost suppose this to be the case, when we find him placed, in all respects, on an equal footing with those whose only crime has been the result of an affliction over which they have had no control, but which, it may be, they have exerted their utmost energy to avert.

"There seems to be no reason why a 'State Asylum' should not be so arranged as to provide separate accommodation for the very different classes which are now all included under one head, and, at the same time that this separation is effected, every provision may be made for affording occupation, and the best means of restoration, to the individuals of each class. The two primary divisions, then, of a 'State Asylum,' should be for the two great classes of 'State Patients' and 'Insane Convicts;' but the principle of classification must not end here.

"It will be remembered that, in the outset, I disclaimed the doctrine of insane persons being necessarily irresponsible. There are those who, with a certain amount of mental infirmity, are yet able to control their actions and guard against the commission of crime; and I conceive that it is a doctrine likely to lead to disastrous consequences, which holds that any amount of mental disturbance may be admitted as an excuse for any amount of crime. That some allowance should invariably be made in awarding punishment, where any amount of insanity has been shown to exist, cannot, I think, be reasonably doubted; but that it should be allowed as a sufficient reason why no punishment at all should be inflicted, I am not at all prepared to admit. An offence committed by an individual who had manifested some trifling symptoms of insanity, should receive a verdict of 'guilty, with extenuating circumstances,' and then it would be in the discretion of the court to determine whether the justice of the case would be best met by sending the offender to a prison or an asylum, and, if the latter, then the necessity for some further classification in the 'State Asylum' becomes obvious."

—Mr. Ley, the resident surgeon in the Oxford and Berks County Asylum, has likewise addressed a short letter, on the subject of a Central Criminal Lunatic Asylum, to Dr. Williams, the secretary of the Association for Medical Officers of Hospitals for the Insane.

31. *Intemperance and Insanity.*—In two papers on intemperance and insanity,* Dr. Browne, of Dumfries, one of our ablest writers on psychological medicine, enters very fully into this subject. Our limits prevent us from following him in his entire range, but we would recommend the paper as worthy the study of any of our readers specially interested in this question.

On the present occasion we would confine ourselves to the fifth section of this essay, in which Dr. Browne examines the point more immediately related to our present subject—*does intemperance tend to produce permanent mental disease?*

In order to solve this question, Dr. Browne has carefully examined 57,520 cases of insanity which have occurred in various countries during the current century, and which have been under observation in public asylums.

General results of inquiry.—Of the grand total, 57,520, ten thousand seven hundred and seventeen cases, or nearly one-fifth of the whole, were caused by intoxication. In a few instances, a solitary indiscretion was so visited. In the vast majority, the disease succeeded long established and habitual drunkenness. It follows, then, that every fifth lunatic who excites our commiseration, who wastes a life-time and a mind's life in isolation and frivolity, who is cast aside like a drift-weed by the great stream of social progress, and who may be a burden upon the charity, and sympathy, and funds of the public, is the remains of a drunkard—a lunatic by his own act.

32. *Relation of Intemperance to the other causes of Insanity.*—The following table exhibits the relation which intemperance and vice bear to the other exciting causes of insanity.

Description of Asylum.	Cases caused by Intemperance.	Cases caused by Vice and Sensuality.	Total Number from both Causes	Total Number of Exciting Causes Returned.	Proportion per Cent. caused by Intemperance alone.	Proportion per Cent. caused by Intemperance and Vice.
6. Metropolitan—private,	101	44	145	424	23·82	34·19
9. Provincial—private,	92	16	108	282	32·62	38·29
10. Provincial — pauper and mixed,	495	110	605	2086	23·72	29·
Total,	688	170	858	2792	24·64	30·73

"It will be seen," says Dr. Robinson of Newcastle, "that these returns refer to intemperance alone *one-fourth*, and to it, in conjunction with vice and sensuality, nearly *one-third* of all the cases of insanity admitted. And as a large number of the causes are marked as unknown, we are, I think, fully justified in considering the results afforded by this table as fairly representing the proportion which intemperance bears in this country to the other exciting causes of insanity. In a report published by the Metropolitan Commissioners

* Pblished by the Scottish Temperance Association for the Suppression of Drunkenness. May 1850.

on Lunacy, the total estimated number of lunatics in England and Wales is stated to have amounted, on the 1st of January, 1847, to 26,516. If, then, we apply to this number the estimate just adopted, we shall find that intemperance alone has reduced 6629 of the present lunatics of our asylums to their lamentable condition; and that to it and other bad habits, 8838 persons now under restraint owe the deprivation of reason."

The conclusion that 19·57, or nearly one-fifth, of the cases of derangement which break up the peace of families and over-people asylums and workhouses is owing to intemperance and dissoluteness, appears so frightful and so fraught with suggestions of the rottenness of the framework of society, that we are fain to regard the picture as descriptive of another age, another land, or of London alone—that mighty mass of moral debris, the constituent parts of which are found to contain, besides 120,000 gamblers, thieves, beggars, 30,000 drunkards found in the streets who could give no account of themselves, 180,000 habitual gin drinkers, and 150,000 persons subsisting by profligacy. But no: even darker colours, and a more lengthened and gloomy perspective, must be employed in delineating the condition of Scotland, or of the urban part of its population. Exclusive of the leaven of other crimes, nearly every fifth lunatic has been a drunkard.

33. *Relations of Intemperance and Suicide*—In examining the history of suicides, it must be remembered that causes are often confounded with motives—that even when the latter are acknowledged previous to death, the authority is not above suspicion; and that both are so complex, as to defy all nice distinction and arrangement. It will thus be found that drunkenness is often the cause of suicide, by impairing the conscience or the judgment, while the immediate incentive is love, or debt, or despair. In like manner, disappointment may lead to a course of dissolute living which ends in self-murder. And, lastly, intoxication may be associated with disappointment, penury, or bodily suffering; and contribute to swell, and multiply, and intensify the pangs and panics which prompt destruction. Thus, in an able series of observations on thirty-eight cases of suicide which were reported in the course of ten years in Aberdeen, while the three principle causes are declared to have been insanity, unhappy love, and family quarrels, it is added that of the thirty-eight individuals, twenty were intoxicated before attempting suicide, seventeen had the character of being habitual drunkards, and an equal number were reported as temperate. Yet, making allowance for such sources of difficulty and vagueness, it is startling that of 2814 suicides which occurred in France in 1841, 185 committed the act either while drunk, or in consequence of habits of drunkenness.

This portentous fact sinks into insignificance on turning to Britain. At a time (1790) when, for twenty-eight years, the average number of suicides in London, Southwark, and Westminster, as ascertained from the coroner, did not exceed 32 per annum, the abuse of spirituous liquors is designated by Howard "the parent of frequent suicide." What conclusion, then, are we entitled to draw from the fact, that fifty years afterwards, in 1839, the number of suicides in the same place amounted to 419? We have been for many years engaged in forming a collection of cases of suicide. The object was to obtain as clear and complete a view as practicable of the moral and psychological history of the tendency and the act. Upwards of 1200 such narratives have now been accumulated. In many respects, the series is perhaps unique. Of these 1222 cases, 158, or about one seventh, sought death under the influence of drinking. Of this number, six appear to have been involuntary suicides—four committing the act while intoxicated and unconscious, and two making the

attempt without intending that it should be successful. The remainder yielded to that impulse which intemperance, in common with the other causes of derangement, engenders, and died as they had lived, degraded and delirious.

34. *Oinomania.*—We abridge the following summary of this strange disease —cases of which are of such frequent occurrence—from an excellent article on the medico-legal relations of insanity in the 'British and Foreign Medico-Chirurgical Review,' No. xi:

This disease has been denominated *dipsomania*, and has been recognised by Esquirol, Marc, and other competent authorities, which therefore renders it unnecessary for us to prove its existence. To the term *dipsomania* we object, as it does not correctly describe the disease, which consists not in thirst-mania, but in an irresistible propensity to indulge in intoxicating liquors, or stimulants which produce the same effect. We therefore prefer the term *oinomania*, by which it has already been designated by a writer who has given a short account of the disease.

35. *Nature of the Disease.—Oinomania* then consists in an irresistible impulse to indulge in intoxicating substances, whenever and wherever they can be procured. It is quite different from drunkenness, which however may induce it. Many men at the festive board invariably become excited or intoxicated, who in general are sober, or even abstemious, and whose consumption of wine and other stimulating beverages is, in the course of a year, much less than that of those who are never seen under their influence. Others take their daily allowance, and consume a larger quantity of alcoholic drinks than is consistent either with health or sobriety. Others again become daily drunk after dinner. All these, however, possess self-control, and can at any time when it suits their convenience abstain from stimulants, though placed before them and even urged upon them. On the contrary, those affected with the disease cannot do so; and however convinced they may be of the impropriety of their conduct, or however anxious they may be to resist, they feel themselves to be, and in reality are, impelled by an overpowering propensity to do that which they know to be wrong, and from which they derive no pleasure.

The disease does not consist in the habit of becoming intoxicated, but in the irresistible impulse which drives the unhappy being to do that which he knows to be pernicious and wrong, and against which he makes many a vain struggle. He derives no pleasure from taste, for he drains the cup, of whatever liquor it may be, at a draught; or from society, for he generally avoids it. His only gratification is momentary, and consists merely in his being freed from the overwhelming misery, mental and bodily, which the non-gratification of his insane impulse inflicts upon him.

This form of disease is hereditary, and frequently occurs in individuals in whom there is a predisposition to other varieties of insanity.

36. *Varieties of the Disease.*—We have had ample means of observing the phenomena of *oinomania*, and have found that there are three varieties of the disease: *the acute*, *the recurrent*, and *the chronic*.

a. The acute is the rarest of the three, and the most easily treated. We have seen it occur after hæmorrhage in the puerperal state, in nursing prolonged beyond the strength of the patient, on recovery from fevers, after excessive venereal indulgence, in some cases of masturbation, and in some forms of dyspepsia. When it proceeds from any of the first four causes, it is easily cured by restoring the patient's strength, and there is every probability that disease will not recur. When it arises from the two last, it is not so

easily removed, and is very apt to assume the chronic form. In the treatment of this variety of *oinomania*, the most modified form of restraint, delicate surveillance is all that is necessary; and it would therefore be quite unjustifiable to remove the patient to an asylum. Change of scene, cheerful society, and some interesting occupation, will be found useful adjuncts to other means of treatment.

b. The recurrent form of oinomania is much more frequent than the acute, though less frequent than the chronic, and comes on in paroxysms. Patients so affected may abstain for weeks or months from all stimulants, and may even loathe them. By degrees, however, they become uneasy, listless, depressed, and irritable, and feel restless and incapable of exertion. They are aware of the impending paroxysm, and struggle against it till the impulse becomes irresistible, and then they drink to an extent which to those unacquainted with such cases would appear to be impossible, and which would destroy any ordinary man. During the paroxysm, there appears to be a greater tolerance of stimulus than the constitution exhibits in its normal state.

The recurrent form of oinomania is observed in those who have suffered from injuries of the head, in some women during pregnancy, at the catamenial periods, on the approach of the critical period and afterwards, in individuals whose health has suffered by living in tropical climates, and in men whose brains are overworked. When it occurs after injury of the head, the case is hopeless; but as such patients are in general very violent, it is necessary for the safety of the community that they should be secluded. In other cases it admits of cure, but only after long treatment, of which seclusion is a necessary part; and, with the single exception of pregnant women, this should never be attempted at home.

The patient ought always to be confined at the beginning of a paroxysm, and the seclusion ought not to be for less than two years. We have seen shorter periods tried, but without permanent success. It may be said that it is hard to confine them when they are free from a paroxysm, and appear to be perfectly rational. It must, however, be borne in mind, that the disease is not cured,—that there is only a lull,—and that it must be looked on precisely in the same light as recurrent mania, no patient suffering under which would any one be fool-hardy enough to set at liberty during the period of quiescence which occurs between the paroxysms.

c. The third variety of oinomania is the *chronic*, which is by far the most common and the most difficult to cure. The patient is incessantly under the most overwhelming impulse to swallow stimulants. To gratify his insane propensity, he sacrifices comfort, decency, and reputation, withstands the claims of affection, consigning his family to misery and disgrace, and denies himself the common necessaries of life. As occurs in the recurrent form of the disease, he derives no pleasure from his potations; he does not relish society, but, on the contrary, shuns it; he is quite conscious of his state, and bitterly laments it; and all the gratification which he enjoys from yielding to his insane impulse, is the temporary relief from the dreadful misery, bodily and mental, which he endures.

In this variety we have the same uncontrollable impulse as in the others. So convinced are the patients themselves of this, that many instances are on record of the unfortunate individuals so affected having voluntarily sought the advantages of an asylum, to protect themselves against their malady. These have been generally cases of the recurrent variety, and of men of stronger minds than usual, though, with all their power, incapable of resisting the malady. Instances, however, are found of those suffering from the

chronic form pursuing the same course. In this, as in the recurrent variety nothing can be done without seclusion; and surely what some patients have themselves felt to be their only refuge against their calamity, it cannot be unjust or harsh to force on others whose minds are more impaired. The chronic form requires long treatment. The whole man must be renewed, before he can with safety be discharged; and this will require a period of at least two years. On the ground of its being necessary for the treatment, seclusion is justified; but on other grounds, it is necessary. The patient is dangerous in most cases to himself and others. He frequently entertains delusions respecting individuals, which are not to be trifled with. He becomes jealous of his wife; fancies that his children are in league against him; and believes that conspiracies are formed among his friends or strangers to injure him. In his low state he is suicidal; in the stage following, there may be comparative tranquillity; and before he is thoroughly intoxicated, he is highly excitable, and often destructive. On the three grounds, then, of treatment, protection to the patient, and safety to the community, such patients ought to be secluded.

§ VI.—*Pathology.*

I. NATURE OF INSANITY.

Dr. Henry Monro, in his 'Remarks on Insanity,' divides the subject into two important parts—the physiology and the treatment; rightly judging that that treatment which is not based on a sound physiology and pathology is worse than useless.

In the introductory chapter on the nature of the disease, three important questions are discussed:—1st. That insanity is of physical origin. 2d. That its phenomena do but represent the usual results of loss of nervous tone. 3d. The sources of this loss of nervous tone. On these three heads we will follow our author's remarks a little way. The remaining chapters are arguments in favour of the conclusions arrived at in the first chapter. These are derived from analogy, the physical condition of the insane, and the results of treatment.

1st. It might appear to most medical men unnecessary to support the physical nature of this affection, but it must be remembered that this book is addressed to the general reader as well as to the profession; and when we find the old doctrine that insanity is a mysterious possession so common—when we see that this theory is strengthened by writers of great repute (such as Abercrombie 'On the Intellectual Powers,')—there is still need for supporting the physical view of this affection. In illustration of this, how often we may hear medical men of great experience, when distinguishing between the delirium of fever and that of insanity, term the one a disease of the body, the other a disease of the mind, as if they were not each of them as much connected with body and mind the one as the other—as if in either case it was not in both cases equally an affection of the physical frame acting on the mind! Dr. Monro is especially careful to draw the distinction between mind, viewed as a bodily function, and mind using the body, or rather the sensorium, only as an imperfect instrument for its manifestation in this life. He reminds the reader that imperfect mind, or insanity, cannot represent our notions of abstract mental evil, for mental evil is of a moral nature, and not a

state of imperfect action. Imperfection of action is peculiarly a sign of a finite destructible machinery, but no one supposes that a fallen spirit acts his part imperfectly. What analogy, then, can there be between the ordinary phenomena of insanity and demoniacal possession?

The position that insanity is of physical origin is maintained by three arguments, namely, 1st. That physical causes are sufficient to account for the symptoms, at least as sufficient as they are to account for the delirium consequent on sleep, (*i.e.* dreaming,) alcohol, poisonous drugs, &c. 2d. Physical symptoms are so remarkable in insanity, that nothing short of want of observation can hide them. 3d. Moral causes are not sufficient to account for the disease when once in full force. It is further declared that the physical view of this disease in no way involves those erroneous and blasphemous notions which are generally comprehended under the term "Materialistic;" for to say that mental phenomena are identical with nervous phenomena is far more erroneous and absurd than to believe that motion is commensurate with muscular action or nutrition with the laws of affinity. For while the latter is but to mistake a part for the whole of a physical force, the former is to confound what is destructible and finite with what is eternal and infinite. To confuse, however, the mental instrument with the mind itself is one thing, and to give this mental instrument its due position and importance is another.

Dr. Monro next desires to prove the exact nature of this physical disease. In doing so, he reduces the symptoms of insanity to their most simple form, and says that they are represented by the excessive and deficient action of the various mental faculties; this excess and deficiency acting either alternately or coincidently. Thus (to use the words of metaphor) some mental images in a madman's brain are painted in harsh and exaggerated colours, while others are more or less blotted out. At one time, or on one subject, perception is morbidly keen; at another it is almost gone. Harmony is lost. The fair picture becomes a chaos; the agitated river has burst its banks—it leaves its channel dry, and destroys the landscape it was intended to adorn and nourish. This state of excess and deficiency marks the loss of equilibrium throughout nature. We see it when the calm surface of the waves is destroyed by the hurricane, and when various physical powers disturb the equilibrium of the atmosphere. These are things which the ordinary observer of nature fully appreciates, but the physiologist alone knows how certain this result is in any act dependent on a nervous system for its manifestation. When nervous matter has lost its equilibrium, the sure result is morbid excess and loss of power. The first of these conditions generally obtains when the injury is slight, the second when it is more complete, though the two conditions continually are coincident in different parts of the nervous system. The special senses supply us with a simple illustration of these facts: thus, the retina, when partially injured, loses the passive state of health which reflects only external bodies, and is forced into a morbidly active state, presenting spectral illusions; and when more injured darkness ensues. The auditory nerve, in like manner, under partial injury, is distressed with tinnitus aurium, and this is succeeded by deafness. But the muscular system presents us with an instance still more simple and conspicuous, when we find that injury to the motor system of nerves is succeeded by convulsions and paralysis, occurring either coincidently or alternately. This theory is so simple that it may well be said, who will deny that insanity is the result of the loss of nervous tone? We have found that all those who maintain its physical nature deny it; but there is a larger and more important class who practically deny this position, when they view the violence of

insane phenomena as necessarily representing excess of vigour in the system, and in consequence employ depleting remedies—a course which generally renders incurable what might have been cured. It is not meant that a plethoric condition may not occasion the destruction of that static equilibrium of nervous force which is only to be found in that happy mean-health; but the reader is forcibly reminded that the most outrageous violence may result as much from the contrary extreme, and that practice and experience vindicate this latter hypothesis. In illustration of this position, Dr. Monro gives some statistics from the records of Bethlehem Hospital. Thus, he says: "If we take one hundred years of the reports of the Hospital, ending December, 1848, we find, that taking the average of the whole number received during that period, 41 per cent. recovered, while 9 per cent. died. This is the general average, but now mark the contrast of the recoveries and deaths of the two extremes of this century: in the five years ending 1753, only 33 per cent. recovered, while 35 per cent. died. In the five years ending 1843, 54 per cent. recovered, and only 5 per cent. died. And if we take all intervening periods, we shall find this improvement of later days to have been a gradually progressive one. Thus the contrast in the modes of treatment, when the use of the lancet is hardly known, and everything is done to increase the vigour of the constitution, is extremely remarkable; even if we make allowance for the ravages of that deadly disease the smallpox, which was active during the earlier periods of the century, comparatively unknown in the later periods. The third point of inquiry is, what is the source of this loss of nervous tone? Why are some people subject to it, others not? Why does the brain in this disease peculiarly suffer, and the rest of the system continue in comparative vigour? If some conspicuous external agency always preceded insane phenomena, we should be at no loss to recognise and to imagine that we understood the course of events. Thus when temporary insanity results from drinking, we should say that the alcohol has poisoned the nervous system and destroyed its powers. If spicula of bone were always found at post-mortem examinations pressing upon the brain, we might think that this loss of nervous tone was the consequence of pressure, but on careful observation the anatomist is as much at fault as the common observer; the dead body of the poor lunatic gives little more sign to him who explores its organism, than can be obtained at the outset of the disease. The origin of this loss of nervous tone is suggested to be consequent on an hereditary and congenital predisposition in the brain to lose vital power under the pressure of causes which would not exhaust ordinary brains. The life of any organised body is maintained by nutrition or reproduction, but it requires power in the organism to maintain this process. Now we know that all organised bodies lose this power gradually, and that that which was so vigorous in youth, fails gradually in old age. But the peculiarity of the insane is that during general bodily vigour the mental powers fade. It is therefore necessary to suppose a peculiar infirmity in the original power of the special organ, which renders it susceptible of failure when external causes act upon it; this is termed deficiency of vital power: it ranks equally with the specific weakness in the lungs when a person is hereditarily consumptive, &c. It would seem almost unnecessary to insist upon the doctrine of an hereditary and congenital predisposition to cerebral failure in the insane, were it not that we find men of eminence using these terms, and at the same time expressing surprise that the microscopy of the insane reveals so little. They seem to forget that the infirmity, according to their own doctrines, arises from a failure of force in the scheme *ab ovo*, and that if any palpable modification of brain substance is to be discovered in insanity,

it is to be traced by the microscope on chemical analysis, rather than by any given methods. External or accidental agents may be exciting, but not ultimate causes, and it is because most intelligent men are continually liable to confound exciting with ultimate causation, that these matters cannot be too much dwelt upon. Exciting causes are infinite; they come under three heads, or, to use the words of Dr. Monro, the brain may be said to be exposed to three fires, one from above, one from below, and a third from its own level. By the first is meant purely mental agency, when the mind reacts upon the brain; by the second agency of a general physical character, where ailment of the body affects the brain in one way or another; by the third structural injury of the brain itself." But these external agencies happen to all men more or less, yet but few become insane. The origin, therefore, of the disease must be in the brain itself.

Dr. Monro observes, that while dwelling upon the violent conduct as the result of less nervous tone, some authors have been inclined to attribute this violence to spasmodic action.

The two positions taken in the first chapter, (viz., that insanity is but a sign of loss of nervous tone, and this loss of nervous tone is the result of depressed vital power,) are supported in the three succeeding chapters. 1st. By the analogy of insanity to other conditions of the mind which are known to arise from deficiency of nervous and vital power. 2d. By the consideration of the general physical condition of the insane. 3d. By the beneficial results of treatment grounded upon the truth of these theories. Before we conclude this notice, we will give a rapid sketch of these chapters.

In the proof by analogy the phenomena of insanity are compared with those of dreaming somnambulism, waking trance, passion, the imbecility at the extremes of life, and the delirium caused by various poisonous agents, whether of external or internal origin. The peculiar phenomena of these various states having been given and compared, the causes of these conditions are next considered, and from the conclusions arrived at the causes of insanity are inferred. In comparing the phenomena of dreaming with those of insanity, they are said to differ mainly in three points: "1st. That the external world is never perhaps so entirely shut out in insanity as in dreams, the special senses seldom or never being so much suspended. 2d. The power of voluntary emotion is lost generally in sleep, but it exists in insanity. 3d. The dreaming still is temporary and able to be dispelled, while insanity is more or less permanent." When, however, somnambulistic phenomena are examined, we find that two of these distinctions at once disappear, for somnambulists are often conscious of the things of the external world, and do use their motor powers; but when waking trance is superinduced, the last strong hold between these states and insanity gradually crumbles away, for this state of vision becomes gradually persistent, and the sufferers incapable of being aroused from it. Thus it is proved that not only do the phenomena of these various dreaming conditions resemble insanity in proportion as they are unhealthy, but they gradually become identical with insanity itself. In tracing, therefore, the causes of these states, we must be able to throw much light on the causes of insanity. Now the history of sleep, and its consequence, the dreaming state, is generally acknowledged to be identical with that period of rest from full vital energy which all organic life requires, in order that it may maintain its integrity. All animal functions have periods of full and depressed activity; if the retina gazes long its powers become exhausted and darkness ensues; the heart's action is a continued alteration of rest and work; the abdominal viscera require longer periods, &c. And if we descend lower in the scale of creation, we find that plants have a sleeping and waking time, some during

their short summer life closing their leaves at night and expanding them by day, others of hardier growth exhibiting full vital vigour during the summer, and sleeping through the winter.

We have only room to notice the comparison of insanity with other states, such as transporting passion, the delirium consequent on the introduction of malaria and other poisons into the system. We must refer to the work for these observations. In the chapter on proving the truth of the theory by the general physical condition of the insane, the relation that inflammation of the brain holds to the disease is discussed at length, and it is substantiated by statistical tables showing the condition of this organ in 175 cases which were examined after death at Bethlehem, how seldom acute inflammation occurs. But it is urged that if it were frequent it would by no means invalidate the asthenic nature of this disease, for "if an organ takes on inflammatory action under circumstances when others would escape, it implies an infirmity, not any excess of vigour in the system." Indeed, except (when we are thinking of treatment) the very term asthenic disease is absurd, for it implies the idea that there is such a thing as disease consequent on excess of strength, whereas the acme of real vigour is synonymous with health. The terms sthenic and asthenic, when so applied, are connected with erroneous ideas on pathology. But the practical point of this chapter is to show that insanity will not bear the depleting system, and that it generally evinces, as seen by the condition of the skin, primæ viæ, &c., a torpid state, and one very different from that of active inflammation. The four vital stimuli, air, exercise, food, and water are declared to be the most available remedies in insanity, and this is shown in the last chapter by the detail of cases lately under treatment.

II. THE RECIPROCAL AGENCIES OF MIND AND MATTER.

In the late Dr. Badeley's Lumleian Lectures, 1851, as also in two very interesting papers by Dr. Chowne, (Lancet, Nov. 1851,) some able observations occur on the strange relationships which exist between mind and matter, a relationship involving the consideration of some of the most abstruse philosophical speculations which can occupy the human intellect.

37. *Influence of Structural on Mental Manifestations.*—The broad general facts, says Dr. Chowne, that febrile disorders produce delirium, and that injuries of the brain impair or destroy the reasoning faculties, are generally, that is to say, popularly known. It is also known to the medical faculty, that positive mania is not incompatible with a state of bodily health apparently perfect, and that it may exist in its worst forms, even where the brain, under the most careful scrutiny after death, does not discover any change incompatible with the exercise of a sane intellect.

It is known, moreover, that changes in large portions of the brain are not unfrequently found after death, even where the mental faculties have remained up to the last hour of life intact.

The force of structural influence makes itself obvious, even in the lower grades of animal creation, which are not deemed to be endowed with intellectual faculties. In them their instincts, however characteristic, whether of the class or of the individual, remain the same only so long as the organisation remains perfect in all its parts and elements. The ferocity of the bull has no counterpart in the ox; the gelding is docile, while the horse is indocile, mischievous, and vicious.

In the human subject, structural influences are still more visible in proportion as there is greater scope for the demonstration and illustration of cause and effect; it is visible moreover in every period of life, from childhood to old age.

As in the animal kingdom the perfection of certain organisations is necessary to the preservation of certain distinguishing characteristics, so in the human subject, and in the human faculties embraced in the comprehensive word—mind, mere difference of sex alone is sufficient to stamp upon the individual determinate and characteristic distinctions. The mental tendencies inherently natural to the one would constitute inconsistencies, discrepancies, and incongruities in the other, and the masculine and the feminine individuals are scarcely more dissimilar in stature, figure, and bodily strength, than in the mental attributes which constitute in each its distinguishing perfection.

Keeping still in view the influence of structure, we perceive that the sequel of certain organic degenerations, or mutilations, is a diminution or loss of peculiar characters; as the distinctive organs, either of the male or of the female, become impaired, so do the peculiarities of the mind as well as of the body become more similar to those of the other sex.

It is consistent also with the perfection of the sex, whether male or female, that under different *general* conditions of the body, as well as *special*, that different bodily incitements should prevail, and different mental emotions be the consequence. I need not cite the well-known examples in the animal creation, in which the individual differs even from itself at different seasons of the year, accordingly as certain elements, the productions of organic structures, abound or are deficient in the system.

We further observe that certain bodily conditions, influenced in their quicker or slower growth, and in their physiological vigour, by locality or climate alone, are accompanied by certain peculiarities of constitution and of character, so decided and marked as to constitute established facts, of which we do not scruple to speak as the consequences of well known causes; early puberty, for instance, in latitudes of high temperature, and late in latitudes where the temperature is low, with their corresponding bodily configuration, physical incitements, and mental tendencies.

In countries where difference of temperature is extreme at different seasons of the year—as, for example, in Naples, where the winter temperature is low and that of the summer high—their respective influences are not confined within the limits which bound the greater or less degree of sanguine temperament merely, and divide the freedom which society tolerates from the broader licence which it does not tolerate; but it is perceived that the frequency and the degree of crime vary with the season; the high enhancing and the low lessening the vicious incentives, not only as regards special, but general crime.

The seasons are observed to have also an influence, though slight, on the issue of insanity. "Mania is more frequently cured in summer than in autumn. The (autumnal) month, October, presents the greatest number of recoveries, February the fewest."*

Constant observation of the human constitution, and of the influences to which it is subject, together with the mental disturbances which arise in close accordance with changes in the bodily state, unfold to the medical man incidents which invite serious attention and study. These disturbances present themselves, not as capricious, accidental, or unconnected occurrences, observing no uniformity with each other, nor with the corporal condition for the time being, but as a series of events, which in their recurrence, in their

* Copland's Medical Dictionary, art. "Insanity," p. 468, col. 2. (Quoted from Esquirol.)

degree, and in their general characters, are essentially uniform; events upon the departure and the return of which, experience gives, although not *pre*-knowledge, at least exceedingly strong presumption, that with certain changes in the condition of the solids and fluids of the body, certain corresponding changes in the mental condition will follow.

III. MORBID ANATOMY.

Dr. Hitchman (now the Superintendent-Physician of the Derby County Asylum,) gave at Hanwell, during the Summer Session of 1850, a course of lectures on the Pathology of Insanity,—a summary of which has been published in the October number of the 'Psychological Journal' for that year.

Dr. Hitchman endeavours to prove that Insanity is *essentially* dependent upon some *change* or *irritation* produced in the vesicular neurine of the convolutions of the brain; and that that malady is influenced by the same laws, and dependent on like physical changes of material structure, as are diseases of the lungs or any other viscera. Dr. Hitchman asserts, that this theory will reconcile the discrepancies of all other writers, because he recognises a kind of reflex power in the hemispherical ganglia, and maintains that intellectual and moral disturbances may, in some individuals, be produced by pulmonary, abdominal, or uterine disorder, through the sympathetic irritation which these maladies may set up in the convolutions of the brain, and also by special conditions of the blood acting upon the same structure.

In all cases of *idiopathic* insanity, Dr. Hitchman contends that there is derangement in the vesicular neurine of the convolutions of the brain; that in every case of acute sthenic mania, there is an inflamed condition of that structure, and that the convolutions, if seen, would present a roseate hue; he believes that this capillary hyperæmia rapidly disappears after death, and sometimes in the act of dying, in the same manner as the inflamed capillaries of the eye become blanched during syncope. According to the statements of this author, insanity may owe its origin in one person to organic change in the grey matter of the encephalon,—in a second to abdominal or uterine disorders,—in a third to a diseased condition of the blood,—in a fourth to an hypertrophied state of the bones of the skull; but that the malady, in each of the latter instances, acts by inducing *irritation* in the hemispherical ganglia. Thus he explains the discrepant opinions of Foville, Pinel, Greding, Kiesloff, Nasse, Guislain, Bayle, Sheppard, and other writers.

Of Dr. Hitchman's 103 cases, 94 were submitted to post-mortem examinations. In 51 of these the calvarium presented some slight departure from healthy structure—this being chiefly absorption, or attenuation in various parts. The dura-mater was preternaturally adherent in about one third of the cases. In 9 the superior longitudinal sinus was thickened by long deposits. In 37, and these chiefly among the aged, the basilar and cerebral arteries were atheromatous. In 4 there were tumours, varying in size from that of a hen's egg to that of a walnut, arising from the dura-mater, and pressing upon the anterior, lateral, and superior surfaces of the cerebral lobes. In 90 the arachnoid membrane was more or less opaque, thickened, or inflamed; in a corresponding number the pia mater was congested with blood, or infiltrated with fluid, and in one case (an epileptic), it was strewed with hydatids. In 68 cases there was marked shrinking or atrophy of the convolutions, and in all these there was an excess of sub-arachnoid fluid. The cineritious neurine of the convolutions was injected, and of a rose colour in 3 cases, all of which were recent, and died while suffering under acute mania. This structure was

pale and blanched in 64 instances; it was of a dark brown colour in 6 instances. The fibrous parts of the encephalon were softened in 11 cases and greatly congested in 12 cases; in 5 cases, (and all these died from general paralysis,) it was firm, tough, and granulated along the surface of the lateral ventricles. The thalami optici and the striated bodies, as well as the corpus callosum, were softened in 3 instances, in which the general structure of the encephalon did not participate in the malady, and in all these there was paralysis prior to death, of a paraplegic or hemiplegic character. In 3 cases, there were great differences in the size of the opposite hemispheres of the brain; in 1, the left lobe was one third less than the right, and the whole brain weighed only one pound six ounces and a half. This patient was idiotic, and the right arm was shrunken and paralysed from birth. In 10 cases, the lateral ventricles were stretched, and distended with clear serous fluid; and in 2 patients, who died of apoplexy, the right ventricle was filled and lacerated by effused blood: in 1 patient, the middle of the left hemisphere was distended with pus. Thus, in 93 cases, there was disease, of some kind or other, in the cranium, the membranes, or the brain, and in 1 only, was there no trace of cerebral disease, and she died of cirrhosis of the liver, after having been for some time despondent and suicidal; and Dr. Hitchman further states that, in the examination of nearly 400 cases, (with the exception of the above case,) he has invariably found some change in the structure of the brain or its covering. Other institutions, where cases in *an early stage* of the malady are examined, have published very different results. Thus Dr. Webster has given the summary of 165 cases examined at Bethlehem Hospital, as follows:

The arachnoid membrane thickened and opaque in . .	62
The pia mater infiltrated in	145
Turgidity of the blood-vessels in	120
The colour of the brain was altered from its natural tint in .	45
Blood was effused in	32
And the medullary parts were congested in	32

§ VII.—*Therapeutic Treatment of Insanity.*

We have received the second edition of Dr. Williams's prize essay on the 'Sedative Treatment in the Prevention and Cure of Insanity.' (London, 1852.)

In our Report on Psych. Med. (Half-yearly Abstract, vol. VII), we slightly noticed the first edition of this essay. It has in its present shape assumed a practical form, more particularly as regards the *therapeutic treatment of insanity*, which leads us now strongly to recommend it to the use of our readers.

38. *Use of Emetics in the Treatment of Mania.*—Dr. Williams (p. 231) has the following very judicious observations on the employment of this valuable remedy in the treatment of recent mania:

"*Emetics.*—Much difference of opinion exists with respect to the advantages or disadvantages of emetics in the treatment of the insane; formerly they were prescribed as the regular routine at Bedlam, but happily this unscientific practice is now discontinued. They have been strongly recommended by Cox and Hallaran, and abjured by Haslam. Dr. Hallaran found them particularly useful in incipient cases, to be succeeded by purgatives. Dr. A. T. Thomson gives emetics frequently in cases of melancholia where there is

oppression rather than exhaustion; and it is found while the sickness continues, the mind is always more calm. In the 'Philosophical Transactions,' several cases of mania have been detailed by Dr. Kinneir, in which vomiting was very beneficial. Esquirol regards an emetic in puerperal mania almost as a specific, having found it so very serviceable.

The objection often made to the employment of emetics, is that congestion of the brain is caused by the violent expulsatory efforts; but Sir W. Ellis found the temporary inconvenience more than counterbalanced by the subsequent good effects.

Many cases of vigilantia, dependant on monomania, or even furious mania, will yield to Ant. Potass. Tart., and often on the vomiting ceasing, refreshing sleep will follow. It has been remarked by Dr. Cox, that one third the usual dose of tartar emetic will prove efficient if a narcotic has been given the night before; generally, however, full doses are required; and the more violent the attack, so is there usually the greater resistance to the action of remedial agents, and as the symptoms remit, a smaller dose becomes necessary.

The continued action of tartar emetic cannot be too much lauded in some incipient cases of mania; while under the influence of antimony, the patient seems rational; it is withdrawn, reaction occurs: the eyes roll or remain fixed; noise succeeds tranquillity; the head again becomes hot. As evening sets in, symptoms increase, and the patient, with unclosed eyes, passes a restless and boisterous night; whereas, had the action of antimony been kept up, placidity, if not actual sleep, would have been substituted for extreme restlessness and violence.

There are cases of excitement where, although injudicious to bleed in any form, yet administering an emetic will be found most useful; patients who have not slept for several nights, will often obtain many hours sleep after vomiting has ceased. Emetics must never be administered to paralytics, nor indeed where there is the least tendency to apoplexy; they are more useful in incipient insanity; are rarely indicated in chronic cases, and should never be given to those advanced in life."

39. *On the Use of Opium and Morphia in the Treatment of Mania.*—To prescribe OPIUM as a narcotic, says Dr. Williams, (p. 234,) in every case of mania, is bad practice; and it is this which has brought it into such disrepute in the treatment of the insane; and it will generally be found more specially useful in removing delirium in those patients who have been strongly addicted to the abuse of spirituous liquors. Opium is contra-indicated where there is great heat of skin with extreme restlessness, and determination of blood to the head; and all authorities seem agreed that it should never be administered where the system is plethoric, unless depletion, or purgation, or both, have preceded it; otherwise excitement will become doubly aggravated.

There are many circumstances which influence or modify the various effects of opium; thus idiosyncrasy predisposes some to high excitation, or to a lethargy almost amounting to coma, and the various gradations between these two extremes are daily to be met with—in some, opium so disagrees as, even in small doses, to produce violent mania. Again, the habit of taking opium always diminishes its effect, while those unaccustomed to it are usually easily brought under its influence. Females require smaller doses than males, and persons of the melancholic temperament bear larger doses than the sanguine; so in cold and damp climates, the inhabitants bear opium better than those in arid and sultry regions, and the difference is no less remarkable in our own country in summer and in winter. There is always more excite-

ment produced by it in the morning than in the evening, and this is also observed when given on an empty stomach. Exhibiting opium or laudanum a short time after a teacupful of arrow-root, will render it much milder in its effects.

Where the nervous system is highly excited, and this is caused by increased arterial action, opium is contra-indicated; and if administered, the symptoms will certainly become aggravated. M. Brachet, in his work 'De l'emploi de l'Opium,' strongly urges the importance of not giving opium where there are decided inflammatory symptoms of the brain or its membranes, and particularly alludes to the increase of cerebral congestion caused by its injudicious employment. Opium will generally be found more useful in incipient than in chronic insanity; it is contra-indicated where there is congestion or inflammation of the brain, and especially if the motor nerves are affected. In paralytics, or where organic disease of the brain exists, it should never be given.

It is impossible to limit the extent to which opium may be required; but in stating that a full dose is necessary, from two to five grains may be considered a large dose for most constitutions; where habit has impaired its effect, one and even two drachms of solid opium have been taken in a very limited period. Pinel knew 120 grains of opium given in one dose to a patient suffering with cancer of the uterus; and I have seen a wine-glassful of laudanum taken at a draught, and this has been repeated three times daily for months—such cases, however, necessarily form the exception.

Where opium disagrees, MORPHIA will often be useful: it has been found that the narcotine of the opium causes many of those distressing sensations of which patients complain who have been under its influence. The acetate was the first preparation of morphia introduced, and was largely employed with great satisfaction; still, however, it was noticed, especially when a large dose had to be prescribed, that peculiar spasmodic effects ensued; and the hydrochlorate having been subsequently tried, was found immediately to produce its direct calming and sedative effect, without the distressing jumps and twitching so often noticed when the acetate had been taken: and general experience now fully proves that morphia may be given without producing headache, dryness of fauces, vomiting, and subsequent distress, not unfrequently caused by opium, so that when this disagrees, morphia may be tried with more than probable success.

Another great advantage of morphia is that it may be continued daily for weeks and even months undiminished in effect, without producing any disagreeable or troublesome symptoms.

Where there is high maniacal excitement, increased by intoxicating liquors, the combination of antimony with morphia will be of the greatest utility, and in such cases if the patient be strong and hale and vigorous, doses of less than half a grain of each of them will prove inefficacious; but in combination they will often speedily render a patient quiescent. (p. 257.)

[We can, from much experience in the use of this combination of morphia and antimony, fully support Dr. Williams's testimony in its favour.]

§ VIII.—*Cholera among the Insane.*

We would desire, in concluding this Report, to place here on record an abstract of Dr. WRIGHT'S valuable Reports on Cholera in the West Yorkshire Asylum.

In his introductory address to the visiting magistrates of the asylum, Dr. Wright states that an unusual mortality in the asylum had preceded the Cholera. During the previous eighteen months, nearly one hundred patients had died, beyond the average annual amount; a number startling enough by its excess, to demand separate and rigid investigation; and when cholera broke out, it carried off, in little more than a month, one hundred more victims. *From these two causes, therefore, a number equal to one third of the patients resident in the Asylum, perished in less than two years, over and above the usual ratio of mortality.*

Dr. Wright's report is devoted to the two subjects of inquiry,—

1.—What have been the causes, and what the extent, of the unusual mortality in the Asylum, during twelve months preceding the occurrence of Cholera in its wards: and—

2.—Whence was the origin of Asiatic cholera in the asylum, what its progress, and what the causes of its fatal virulence; under what circumstances or peculiarities were those whom it selected as its victims; and what means seemed most effectual in modifying or quelling the pestilence.

After an elaborate examination into the dates of admission, ages, terms of residence, and causes of death, during the gradual enlargement of the Asylum from its being opened in 1818 up to 1850, Dr. Wright finds that the mortality previous to the erection of a new supplementary building in 1848, had been regularly declining in successive quinquennial periods from 18·6 in 1825-30 to 9·3 in 1845-8; but that after midsummer 1848, while an unprecedented influx of 435 new patients were received into the asylum, the mortality among the older cases remained nearly the same as in the previous years—7·6 per cent.; but among the recently admitted the mortality rose from 4 to 11 per cent., thus proving, that while of the patients entered during and since the year 1848, a much larger proportion of those newly admitted died, in the ratio of 20 to 13 per cent.; those who had been above a year in the asylum were unaffected by any change in the like periods.

40. *Invasion of the Cholera.*—At the time of the invasion of cholera, which Dr. Wright limits to express, "a state of livid collapse, with or without diarrhœa and vomiting," there were 620 patients, 371 in the old building and 249 in the new. Of these 620 patients in the asylum on the 1st of October, 331, or more than one half, suffered during the succeeding three months, from disorder in the bowels, in a more or less severe degree. Twenty-four were attacked more than once. And 200 cases of diarrhœa are recorded; 27 of dysentery; and 132 of cholera.

A majority of the records of diarrhœa is among the women, in the proportion of 33·3 per cent. to 22·2 per cent., of the respective numbers resident; 4·3 per cent. of the men had dysentery, and 3·7 per cent. of the women.

The ratio of cholera was highest amid the men, 22·9 per cent. to 19·7 per cent. of the women.

"Of the cases of DIARRHŒA 85 per cent. were simple, and 15 per cent. passed into cholera; the proportion of the latter being greater in the women than the men, as 15 to 13 per cent. The whole of the patients who suffered from epidemic diarrhœa only, recovered; of those ending in cholera not more than 30 per cent.; the fatal cases being rather more numerous among the men.

The sufferers from DYSENTERY were nearly equal in both sexes; and all who were attacked by dysentery only, got well; whereas every case that lapsed into cholera died.

41. *Mental State of Patients affected by the Cholera.*—Respecting the mental

state of the patients affected by the epidemic, we may summarily note, that of those suffering from—

Delusions	34·2	per cent. were ill,	14·2	per cent. had cholera.
Mania	47·8	,,	22·7	,,
Melancholia	55·5	,,	11·1	,,
Dementia	55·4	,,	22·7	,,
Amentia	42·0	,,	20·0	,,

The proportion that recovered and died, of cases of cholera, in each class, were—

Delusions	20·0	per cent. recovered,	80·0	per cent. died.
Mania	28·5	,,	71·4	,,
Melancholia	—	,,	—	(all died.)
Dementia	17·3	,,	82·6	per cent. died.
Amentia	40·0	,,	60·0	,,

The greatest proportion of illness, and the least of cholera, were thus among patients suffering from mental depression; but when attacked with cholera, they were the most unfavorable cases; and next to the melancholic may be reckoned the demented.

About 46 per cent. of the curable were ill, and 48 per cent. of the incurable; diarrhœa preponderating amid the former; while of cholera cases 6·8 per cent. only were among the mentally curable, and 24·1 amid the mentally incurable. Forty-six females of the latter class died, and only three whose mental state left hope of recovery.

Out of forty-three patients addicted to suicide, eight were attacked with cholera, and only one recovered.

42. *Influence of Diet, Habits, and General Health on the Epidemic.*—Dr. Wright has analysed the condition of the female patients as to diet, habits, and previous physical health, in a series of tables, from which we extract the following results.

"To estimate the influence of DIET, we may observe, that of cleanly patients, in general good bodily health, about 43 per cent. were (Oct. 1st) on common diet, and 14 per cent. had daily meat, dinner, and extras. Of the former, on common diet, 27 per cent. were affected with diarrhœa; and 40 per cent. of the latter: or about half as many more of those on extra as on ordinary fare. But of those attacked with dysentery, the proportion was twice as great on common as on meat diet. And if we look to the total cases of cholera, we shall find them one fourth more numerous among those on common than of those on full, or meat diet; the chief difference being among cases without premonitory symptoms, of whom there were 6 per cent. on meat diet, but 11 per cent. on common fare. The recoveries from cholera were larger in proportion amid the patients affected who were on common diet: the mortality nearly alike in each.

"From these data we may infer, that the difference between the ordinary diet of the asylum, (with three days soup, and four meat dinners a week,) and full diet, (without soup, and with daily meat, rations, and other extra allowances,) had this effect on the epidemic:—patients were at least equally susceptible of attack, or those on meat diet most so; but in the majority of patients on full diet, their illness ended in diarrhœa only, while a larger proportion of those on common diet were liable to cholera, and were chiefly attacked without premonitory symptoms.

"Amid feeble patients on full and on common diet the proportions were the

reverse of those among the healthy. There was a larger ratio of the latter attacked with diarrhœa, 40·5 to 32 per cent., with dysentery 5 to 4 per cent., and with cholera 21 to 15 per cent. Only one patient recovered from cholera in each division, while the deaths were 19 per cent. of those on common diet, and not more than 13 per cent. on full rations. A clear argument in favour of a liberal allowance of extra diet to those patients whose general health is less than ordinarily robust, or who are suffering from chronic bodily disease.

The next question is, what bearing had the state of previous general HEALTH on the fate of those exposed to the epidemic?"

"Of the cleanly female patients, on full diet, in good health, 40 per cent. were attacked by diarrhœa; and only 32 per cent. of the feeble; a result as unexpected as in the former experiment. But two cases of dysentery occurred among the feeble, and only one amid the healthy. Of those attacked with cholera, in these divisions, were 12 per cent. of patients in good health, and 15 per cent. of the feeble. The recoveries of the previously healthy were 4 to 2 per cent., while 13 per cent. of the feeble died, and only 8·5 per cent. of the more healthy class; and again, it may be remarked, that the difference lies chiefly among those cases that were not preceded by what are termed premonitory symptoms.

"The effect of HABITS as to general cleanliness, or the reverse, is more strongly marked, and accords more fully with the results that might have been anticipated. To judge of its amount, almost any of the corresponding classes may be compared, which differ only as to habits, and are alike as to health and diet. In all, a similar anomaly may be observed, as to diarrhœa, that was noticed above; the proportion of cases occurring in cleanly patients materially *exceed* those among the dirty. Of the eleven cases of dysentery recorded among the women, all were cleanly patients. But in cases of cholera, by far the greater proportion were those of dirty habits.

"Of 174 patients in good health and on common diet, 16 per cent. of the cleanly, and about 26 per cent. of the dirty, were attacked with cholera; or in other terms, out of eight patients of this class who had that disease, three may be estimated to have suffered in consequence of want of cleanliness. And the ratio of deaths is still higher, 9 to 22 per cent., for seven out of those eight dirty patients died; while the proportion of cleanly patients who died would have reduced the number to three. Four out of the seven may be considered, therefore, to have fallen a sacrifice to uncleanly habits.

"Only one tenth of dirty patients recovered from cholera, or 2 out of 20; but of 44 cleanly patients attacked, 13, or nearly one third, survived."

43. *Origin of the Epidemic.*—The origin of the pestilence is investigated with minute care. The first attacks were all in the same ward, on the third story of the new building, and were immediately subsequent to the admission of a female from Gomersal workhouse, where cholera was then prevalent. No diarrhœa or other disorder of the bowels was previously existing in that ward; and Dr. Wright thus sums up this section of the inquiry.

"When, therefore, we remark the first occurrence of cholera to be in a ward particularly clean and well ventilated, spacious, lofty, and the very reverse of crowded, and of which the drainage on being carefully examined was found to be unexceptionable; amid patients not one of whom had previously any disorder of the bowels; and selecting, as its first victims, four women in that ward, who were in no apparent degree predisposed to alvine or other disease, differing in the forms of their mental malady, in their general characteristics, diet, and previous state of health; dissimilar in age; and similar *only* in being inmates of the same ward into which a patient suffering

from suspected cholera had recently been received, from an institution where she had left two persons lying dead of that disease,—I do not see how we can escape from, or resist the conviction, that *infection* in some way brought into the asylum by that patient, and not epidemic influence alone, nor any cause previously intrinsic to the building, was the active source of the pestilence within its walls, the fatal origin of its devastating ravages."

The epidemic continued six weeks, but its virulence extended chiefly over ten days, when after reaching an acme of nineteen deaths, on the 27th of October, it suddenly subsided.

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